Socio-Economic Assessment of the Public Review Draft Southern Rocky Mountain Management Plan

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In developing the socio-economic estimates prepared for this study, the consultants have made several forecasts and assumptions utilizing information gathered under the time and resource constraints imposed on this study. These forecasts and assumptions are thought to be reasonable and suitable for the purposes of this analysis, but should not be relied upon for other purposes.

The Plan Area boundaries do not, in general, coincide with management unit boundaries for the resource values under consideration in the Plan. It has therefore been very difficult to source baseline data and assess impacts of the Plan on these resource values. In undertaking this task, the consultants have been required to make estimates of the socio-economic significance of resource values and associated activities in the Plan Area, based on data from much broader or much narrower geographic areas or management jurisdictions.

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EXECUTIVE SUMMARY

The Public Review Draft Southern Rocky Mountain Management Plan (SRMMP) is the landscape unit level implementation of the East Kootenay Land Use Plan (1995), the Kootenay / Boundary Land Use Plan and Implementation Strategy (1997), and the Kootenay-Boundary Higher Level Plan (2002). These earlier plans made broad strategic choices for the use and management of lands in the East Kootenay region, including the lands now comprising the SRMMP area. Thus, the SRMMP lands are expected to play a strategic role in the balance of ecological, economic and social values within the entire East Kootenay context.

The stated intent of the SRMMP to balance "economic, social and environmental values for the long-term health of the economy, communities and ecosystems" is tempered by the overriding requirement to be consistent with the broader strategic vision supplied by the earlier planning processes.

Much of the specific management direction in the SRMMP, as well as the general emphasis on conservation and development in different parts of the Plan Area, is derived directly from the KBLUP.

This socio-economic assessment of the SRMMP does not attempt to maintain a regional or provincial strategic perspective on the contribution of Plan Area resource values, but rather views the Plan Area as an essentially isolated land unit.

This socio-economic assessment assumes that the management objectives and direction outlined in the SRMMP can and will be applied and enforced in the Plan Area. No attempt has been made to assess the likelihood or feasibility of implementing management objectives.

The extent to which the public review draft SRMMP achieves ecological objectives is not addressed in this assessment, but is the subject of a separate, concurrent analysis.

The entire SRMMP Plan Area falls within the Ktunaxa Nation's Traditional Territory. The Ktunaxa have expressed concern about their limited capacity to effectively participate in the planning process, and do not consider the consultation that occurred prior to publication of the draft plan to be meaningful or adequate. The public review draft SRMMP states the intent to provide for cultural, economic and environmental interests of the Ktunaxa, and to continue to pursue consultation with the Ktunaxa Nation. In the course of this assessment, no effective facility or mechanism was established to gather information on how the SRMMP may impact the interests of the Ktunaxa Nation, and no assessment of those impacts is therefore attempted.

Socio-Economic Assessment

In general, the public review draft SRMMP appears to facilitate economic activity, while balancing social concerns related to outdoor recreation, by:

- Delivering tangible degrees of certainty of access to crown land resources for extractive industries, which anchor the economies and basic viability of adjacent communities;
- Zoning the SRMMP land base to accommodate a variety of outdoor recreation activities and commercial tourism operations;

- Maintaining wilderness and wildlife values supporting the guide outfitting industry and recreational hunting; and

- Maintaining fish habitat supporting the guided angling industry and recreational angling.

By sector and/or activity, the Plan impacts are assessed as follows:

SRMMP Impact	Sector or Activity	Socio-Economic Significance in Plan Area	
		Current	Potential
Very Positive	Guide Outfitting	Modest	Modest
Positive	Metal and Mineral Exploration	Minor	Modest
	Metal and Mineral Mining	None	Modest
	Conventional Oil & Gas	None	Modest
	Coal Bed Methane	Minor	Substantial
	Forest Industry	Substantial	Substantial
	Guided Angling	Modest	Modest
	Trapping	Minor	Minor
	Non-Motorized Resident Backcountry Recreation	Substantial	Substantial
	Backcountry Adventure Travel Operators	Modest	Modest
Neutral	Coal Exploration and Mine Development	Minor	Substantial
	Coal Mining	None	Substantial
	Agriculture	Minor	Minor
Negative	Motorized Summer Resident Backcountry Recreation	Modest	Modest
	Recreational Snowmobiling	Modest	Substantial
	Heli-Aided Commercial Recreation	None	Modest
	Heli-Aided Resident Recreation	Minor	Modest
	New Backcountry Lodge Development	None	Modest

- Impacts are assessed as neutral or positive for most sectors or activities judged to have a substantial current or potential socio-economic impact. The exception is recreational snowmobiling, which is thought to have substantial potential socio-economic impact, but will experience somewhat negative impacts from the SRMMP on balance.

- Negative impacts relate primarily to potential recreation or tourism activities that are not well established in the Plan Area.

- With respect to the tourism and recreation sectors the SRMMP appears to be oriented more toward "maintaining" existing economic and social activity patterns, than providing for new economic activities and social diversity. For example:

  - The Plan is very restrictive for summer motorized recreation;
  - The Plan forecloses on the likely modest opportunities to develop helicopter aided adventure tourism; and
  - The Plan is very restrictive with respect to developing backcountry lodges.

These restrictions may have justification in supporting ecological or other socio-economic values, but it is important to note that they are not without cost.

- The Plan may confer unintended benefits on 'grand fathered' commercial recreation tenure holders whose licensed activities do not conform to the Recreation Management Plan zoning contained within the SRMMP.

- Plan restrictions on new backcountry lodges may confer unintended benefits on the owners of existing backcountry lodges and cabins that can be upgraded or replaced.

In general, coal industry impacts from the SRMMP will be experienced in Fernie, Sparwood and Elkford, and forest industry impacts in Elko, Jaffrey and Cranbrook. The SRMMP adds some certainty of access to resources for the mining and forest industries, which should result in some increase in confidence in the basic viability of the affected communities. This impact will likely be difficult to detect, however, in the face of the many other regulatory, operating and market uncertainties faced by these industries.

SRMMP impacts on recreation and tourism will be felt in all of the communities mentioned above. The impacts on resident recreation will largely reinforce the lifestyle choices made by the existing populations in these communities. It appears as though past patterns of recreational use and activity have been defended in the Plan, in the face of new motorized technologies that threaten to erode the enjoyment of these activities in many areas.

The Plan may have negative impacts on the ability of Elkford (the most vulnerable of the three major communities), to diversify its economic base through attracting more motorized recreation tourists. Elkford has difficulty, however, capturing the economic benefits of recreation activity.

1 Introduction

The BC Ministry of Sustainable Resource Management (MSRM) released the Public Review Draft Southern Rocky Mountain Management Plan (SRMMP) in February 2003 for public review and comment. The planning process requires an independent socio-economic assessment of the draft plan to be completed prior to finalization and adoption of the plan. This socio-economic assessment compares the economic and social prospects expected to be generated by plan area resources under the public review draft SRMMP, with the economic and social prospects outlined in the socio-economic Base Case document prepared during the formulation of the draft plan.

This section reviews the general objectives and intent of the SRMMP and provides an overview of the methodology suggested by MSRM for socio-economic assessments.

1.1 SRMMP Objectives

The Southern Rocky Mountain Management Plan covers the Flathead, Wigwam, the east side of the Bull River and the west side of the Elk River drainages in the southeast corner of British Columbia. The intent of the plan is to facilitate sustainable economic development. The plan aims to balance economic, social and environmental values for the long-term health of the economy, communities and ecosystems.

As a landscape-level plan, the SRMMP is intended to be consistent with the Cabinet-approved strategic regional land-use direction for the area:

- East Kootenay Land Use Plan (EKLUP, 1995);
- Kootenay-Boundary Land Use Plan Implementation Strategy (KBLUP-IS, 1997); and
- Kootenay-Boundary Higher Level Plan (KBHLP, 2002).

The first two provided policy direction, while the third established Resource Management Zones and legal Objectives for forest development under the Forest Practices Code. The SRMMP also incorporates and builds on these broader-level plans, and is intended to provide a "one-stop shop" for clear land and resource management direction in the area, replacing all the broader-level land use plans for the SRMMP area.

In addition to the requirement of consistency with broader-level plans, there is a list of expectations of the plan outcomes, expressed in the plan mandate, some of which are particularly pertinent to this socio-economic assessment. The SRMMP is mandated to:

- be consistent with provincial sustainability principles
- recognize and balance all resource values and uses
- stimulate sustainable economic development
- provide certainty
- respect existing tenures and rights in the plan area

Much of the management direction in the SRMMP represents the landscape level implementation of management direction provided by the above noted broader-level strategic plans. This Socio-Economic Assessment will first examine the overall impacts of the SRMMP package, and then attribute the impacts either to new initiatives of the SRMMP itself, or to the other broader strategic plans or regulatory initiatives that directed much of the content of the SRMMP.

Major assumptions applied throughout this analysis include:

1. That the management objectives and direction outlined in the SRMMP can and will be applied and enforced in the Plan Area. No attempt has been made to assess the likelihood or feasibility of implementing management objectives.
2. That the impacts assessed are those related to the use, enjoyment or existence of Plan Area resources. No attempt has been made to assess the degree to which resource use in areas adjacent to, or otherwise outside of, the Plan Area might adjust to changes in resource use in the Plan Area.

1.2 MSRM Methodology for Socio-Economic Assessment

MSRM, in collaboration with *Pierce Lefebvre Consulting*, has prepared Guiding Principles to help assess the socio-economic impacts associated with land use planning[1]. As noted in these Guiding Principles, the socio-economic and environmental implications of land and resource management plans and/or scenarios can be assessed from a number of perspectives:

1. Benefit-cost analysis estimates the differences in net value of the market and non-market outputs generated by the plan and/or each scenario from a pure "economic efficiency" or "net resource value" perspective.
   - For commercial sectors, the net resource value (or economic rent) represents the above-normal financial returns from a commercial activity that occur as a result of the product or service generated by that activity being in relatively fixed supply relative to demand. Rent can accrue to the entrepreneur, be captured by the land and/or resource owner (government) or be incorporated in wages paid to labour.
   - For non-commercial activities such as recreation and the benefits associated with environmental resources, the net benefits fall into two categories: use-related values (e.g. recreation, food gathering, air and fresh water) and existence-related values.
2. Environmental risk assessment estimates the changes in likelihood of adverse environmental impacts resulting from human activities.
3. Economic impact analysis estimates impacts of the plan and/or scenarios on income and employment within specific communities, regions, or the Province as a whole.
4. Social impact analysis identifies and evaluates impacts of the plan and/or scenarios on demographic, local government and community concerns.

Each of these perspectives alone addresses only specific aspects of the consequences of a plan. The objective of socio-economic and environmental assessments are to review the complete array of social, economic and environmental impacts from a plan and present the information in tabular or matrix format to facilitate the review of the information by decision makers. For the SRMMP, the environmental risk assessment for the SRMMP is being conducted as a separate analysis from the socio-economic assessment. This report is therefore concerned only with the social and economic impacts associated with the plan.

[1] MSRM, *Socio-Economic and Environmental Assessment for Land and Resource Management Planning in British Columbia: Guiding Principles*, Draft for Discussion Purposes, January 2003.

2 Assessment of Plan Impacts on Industrial Sectors

2.1 Coal Mining

There are five operating coal mines near the Plan Area, which have approximately 2,500[2] employees and generate an estimated $39 million in annual government revenues (including property taxes of $2.8 million to the community of Elkford, $2.3 million to Fernie and $1.8 million to Sparwood)[3]. While the operating mines are located outside of the plan area, they provide the economic foundation of the three major communities most directly connected to Plan Area resources. Appendix 1 to this report estimates the economic impacts of the East Kootenay coal industry in the region and the province. These annual impacts include $172 million in direct employment income, and another $116 million in indirect and induced employment income (these figures are not adjusted for leakage of employment income to Alberta, which is thought to be considerable).

The 'net economic value' of the East Kootenay coal mining industry to the province is estimated at $16 million per annum.

As noted in the Base Case background information, exploration has revealed coal resources in, and near the Plan Area but outside the existing mine sites. These include: the Sage Creek proposal, which has been dormant since the 1980s; the Flathead Townsite and Lodgepole properties, also currently inactive; and the Bingay Creek property north of Elkford.

Most of the known coal resources in the southeast Kootenays that are located on crown lands are on lands designated by the KBLUP-IS as Enhanced Resource Development Zones (ERDZ-Coal). This designation places increased emphasis on managing the lands for coal resource development, but the details of how that emphasis will be expressed in specific management direction have not yet been established.

One of the objectives of the SRMMP was to specify new guidelines for the ERDZ-Coal lands. Most of the East Kootenay ERDZs for coal are located close to, but outside of the Plan Area. It was anticipated that the Plan Area boundaries might expand to include more of the coal lands, but this had not yet occurred. The ERDZ-Coal lands within the Plan Area include a small area in the northern Elk Valley, and another small area in the upper Flathead (these two areas comprise 6,950 hectares, representing about 18% of the ERDZ-Coal lands)

Significant known coal resources in the Plan Area, which are not on ERDZ-Coal lands include Sage Creek Coal's licenses in the lower Flathead area. The SRMMP emphasis on habitat conservation and wilderness preservation in the Lower Flathead area could have cost implications for the development of the Sage Creek coal licenses.

While the SRMMP confirms the boundaries of the ERDZ-Coal lands and reiterates that the designation represents a long-term priority commitment and long-term security of access for the coal industry, it does not develop any specific ERDZ-Coal guidelines. This is noted in the plan as a potential future project, which would address all East Kootenay ERDZ-Coal lands both within and outside the SRMMP area.

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[2] Recent layoffs at Line Creek Mine (270 employees) associated with the ownership consolidation of the five operating coal mines have likely reduced this number since the Base Case document was prepared.
[3] Roger Berdusco, personal communication.

Elements of the SRMMP that may have some cost implications for exploration and development of coal resources in the Plan Area include access restrictions, connectivity provisions and grizzly bear management provisions. The coal license holder for the Bingay Creek property has expressed concern that inclusion of this property in the SRMMP is giving potential investors pause when evaluating the feasibility of putting the property into production[4] (despite its ERDZ – Coal designation).

The SRMMP emphasizes the two-zone system for the mining sector, although legislation for the two-zone system is enacted under the Mineral Tenure Act, which does not specifically apply to coal mining.

SUMMARY OF SOCIO-ECONOMIC IMPACTS OF THE SRMMP ON **COAL MINING**:

- Does not impact existing coal mining operations.
- Confirms boundaries of the ERDZ-Coal lands, but does not specify ERDZ-Coal guidelines, which it intended to do. This has left some uncertainty for licence holders on ERDZ-Coal lands in the Plan Area.
- Designates conservation measures for the Lower Flathead area, which could increase development costs for known coal resources in the area.

OVERALL SOCIO-ECONOMIC IMPACT: **NEUTRAL**

2.2 Metals and Minerals:

There are no operating metal or industrial mineral mines in the Plan Area. Rankings of metal mining potential suggest that the potential in the Plan Area is comparatively modest[5]. Metal and industrial minerals exploration projects in the Plan Area include the Ice diamond project north of Elkford, the Crowsnest and Howell gold properties in the Flathead area, and the Commerce Resources property also in the Flathead.

Total exploration expenditures for the Plan Area are not readily available, but data from the MEM Assessment Report Index (ARIS) database show that between 1970 and 2001, an average of 11% of registered East Kootenay mineral exploration expenditures have been expended in the Plan Area, or an estimated $250,000 per year after accounting for inflation ($2002) and generating approximately 3 PYs of employment each year. While the exploration expenditures have minimal socio-economic impacts, the benefits associated with mineral exploration would accrue mainly as a result of exploration being successful at identifying a mineable deposit.

In 2002, the B.C. Government legislated a two-zone system for mining along with a 'single-window' permitting process for exploration and development of mineral resources. The SRMMP confirms the two-zone system for mining in the Plan Area, stating numerous times that mineral exploration and development is permitted anywhere outside of protected areas, subject to measures to limit impacts on other values as outlined in the Mineral Exploration Code and mine development regulations.

[4] William Shenfield, written comment submission to SRMMP study team.
[5] Holman, Gary and Pierce Lefebvre Consulting, *Socio-Economic Base Case for the Southern Rocky Mountain Management Plan*, 2002, Appendix 5.

The SRMMP's clear statement on the two-zone mining system brings more certainty that mineral exploration, and ultimately mining will be permitted in the SRMMP area. While a similar statement on the ability to explore and mine anywhere outside of protected areas was made in earlier broad level plans (i.e. EKLUP and KBLUP-IS), the zoning and management objectives presented in those plans created confusion in the mining community about the ability to explore, develop prospects and mine in some of the zones or management areas. The legislated two-zone system, and its more forceful expression in the SRMMP, should lead to increased confidence and certainty that mineral resources can be found and developed in the Plan Area. This is likely to take several years to be expressed in increased exploration and/or development, and will be subject to external factors such as metal and mineral commodity prices.

There are known significant mineral occurrences in the Flathead area, and the proposed national park in that region would likely alienate some of those mineral resources. The SRMMP, with its emphasis on preserving and enhancing ecological values in Landscape Unit C18, may diminish the perceived need for expanded protected areas in the Flathead drainage.

SUMMARY OF SOCIO-ECONOMIC IMPACTS OF THE PLAN ON **METALS AND MINERALS EXPLORATION, DEVELOPMENT AND MINING**:

- Confirms the two-zone system for mining in the Plan Area, stating numerous times that mineral exploration and development are permitted anywhere outside the protected areas.
- Designates conservation measures for the Lower Flathead area, which could increase development costs of the copper and gold prospects in that region. On the other hand, these conservation measures may help reduce the need or demand for additional parks in the area.

OVERALL SOCIO-ECONOMIC IMPACT:
POSITIVE, as the probability of finding and developing a mineable deposit is now increased; the positive impact results primarily from the two-zone legislation, rather than the SRMMP.

2.3 Energy

The Geological Survey of Canada estimates that undiscovered potential energy resources total 88 million barrels of oil, 400 billion cubic feet of natural gas, and 33 trillion cubic feet of coalbed methane in the Fernie Sedimentary Basin[6]. While much of this basin lies east of the Plan Area, there is significant overlap with the Plan Area, particularly in the southern portions.

Traditional Oil and Gas Exploration and Development:

At present, there is no traditional oil and gas development activity in the Plan Area. The Flathead area is viewed as having high oil and gas potential that has not been fully explored[7], and while several wells were drilled in the past, there has been no activity recently. Conservation management objectives in the SRMMP could have some cost implications for exploration and development in parts of the Flathead should industry choose to pursue this potential in the future.

[6] www.em.gov.bc.ca/Oil&gas/initiatives/Graphics/BCSedBasPipMap1.jpg
[7] Monahan, P.A., *The Geology and Oil and Gas Potential of the Flathead Area, Southeastern BC*, for BC Ministry of Energy and Mines, 2000.

Coal Bed Methane:

The substantial coal bed methane potential associated with the Elk Valley and Crowsnest coalfields lies outside of the Plan Area for the most part. Areas of overlap include the north end of landscape unit C23 in the upper Elk Valley, and significant portions of landscape unit C17 in the upper Flathead. Current exploration and development activity is outside of the Plan Area in the Elk Valley coal field, where Encana has 11 wells on production pilot testing.

The government of B.C. recently introduced new legislation to clarify the ownership of coalbed gas rights as distinct from coal rights, to enable coalbed methane development in the province to proceed with greater certainty.

An industry representative[8] contacted as part of this study indicated they are generally pleased with the language in the SRMMP and the certainty it brings to potential development activity in the Plan Area. Any potential cost impacts with respect to the upfront surveying requirements outlined in the SRMMP may be felt in parts of the Crowsnest field if coal bed methane development moves to those areas.

SUMMARY OF SOCIO-ECONOMIC IMPACTS OF THE PLAN ON **ENERGY RESOURCES**:

- Potential exploration and development cost increases in some areas are balanced against the generally greater certainty of how and where development can proceed.

OVERALL SOCIO-ECONOMIC IMPACT: **POSITIVE**

2.4 Forestry

The contribution of the crown forest lands in the SRMMP area to the South East Kootenay region's forest industry is documented in the Socio-Economic Base Case[9] for the SRMMP. The crown timber harvesting land base (THLB) in the SRMMP area comprises 19.2% of the crown THLB in the Cranbrook Forest District. Assuming that this land base is able to support a pro-rata share of the Cranbrook Forest District's timber harvest (AAC), the SRMMP area contributes about 165,000 m3 of timber per year to the region's forest industries (this does not include a similar volume harvested from private lands adjacent to the Plan Area).

Appendix 1 to this report outlines the annual economic impacts derived from the Plan Area timber harvest including 155 person years (PYs) of direct employment, $7.2 million in direct employment income and $2.75 million in stumpage revenues to government. Indirect and induced employment multipliers for this industry are relatively high (1.26 additional indirect and induced PYs for each direct PY), and add another 195 PYs of employment and $6.7 million in employment income to the total provincial economic impact. The 'net economic value' of the timber resources provided by the SRMMP area land base is estimated at $3.11 million per annum.

[8] Allan Greeves, EnCana, personal communication
[9] Holman, Gary and Pierce Lefebvre Consulting, *Socio-Economic Base Case for the Southern Rocky Mountain Management Plan*, 2002.

The economic impacts of the SRMMP area timber resources are spread across the Elk Valley communities of Sparwood, Fernie, and Elko, as well as Jaffray, Wardner and Cranbrook further to the west.

The stated intent of the SRMMP is to maintain access to the timber harvesting land base, maintain short term and long-term timber supply, and maintain an environmentally and economically sustainable timber industry within the Plan Area.

Management of timber harvesting in the Plan Area has altered substantially over the past decade, directed by provisions of the East Kootenay Land Use Plan (1994), the Forest Practices Code (1995 and subsequent amendments), The Kootenay Boundary Land Use Plan – Implementation Strategy (1997) and the associated Kootenay-Boundary Higher Level Plan Order (2002). In addition, there are major upcoming changes to timber tenure regulations and timber pricing mechanisms for crown forests[10] that could prompt wide scale industry restructuring.

As noted in the SRMMP Socio-Economic Base Case[11], most of the expected timber harvesting land base and timber harvest volume impacts of the KBLUP-IS were factored into the Cranbrook Timber Supply Area allowable annual cut determination, effective January 1,2001[12]. The SRMMP process, which is essentially the landscape unit level interpretation/implementation of broader strategic direction provided by the earlier plans, was not anticipated to have any significant impacts on timber volumes available for harvest. Any incremental impacts associated with the SRMMP were expected to affect harvesting costs, rather than volumes available[13].

Management objectives in the SRMMP that may have specific impacts on the forest industry include the Enhanced Resource Development Zones for Timber, the Recreation Management Strategy, Conservation objectives, Water management objectives and Visual Landscape objectives.

The following tables and paragraphs provide an indication of how some of the SRMMP management objectives are expected to impact timber harvesting activities, and the potential significance of those impacts. The Connectivity Matrix components noted in the table below are listed in order of their degree of constraint on harvesting in affected areas, from most constraining to least constraining.

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[10] BC Ministry of Forests, *B.C. Heartlands Economic Strategy - The Forestry Revitalization Plan*, Victoria, March 2003.
[11] Ibid, pg. 44-45
[12] B.C. Ministry of Forests, Chief Forester Larry Pederson, *Cranbrook Timber Supply Area, Rationale for Allowable Annual Cut Determination, Effective January 1,2001.*
[13] Holman, Gary and Pierce Lefebvre Consulting, pg.45

Table 1 Incidence of Conservation Values on Plan Area Timber Harvesting Land Base

Managed Values	Area in Hectares	Portion of THLB
Connectivity Matrix		
Old Growth Management Area	7,762[2]	8.9%
Mature Seral Management Area	3,145	3.6%
Riparian Areas	2,338	2.7%
Backcountry River Corridors	6,301	7.2%
Avalanche Chutes & Adjacent	178	0.2%
Ungulate Winter Range (PEM)	27,872	32.0%
Connectivity Matrix Sub-total	47,596	54.7%
Not in Connectivity Matrix	39,486	45.3%
Total Timber Harvesting Land Base	87,082[3]	100.0%

Notes:

1. Source: GIS data supplied by Russ Hendry, MSRM
2. Is not consistent with the estimate in Appendix 23 of the SRMMP (8,324 hectares).
3. The above table includes all of Landscape Unit C27. The THLB of the Plan Area (excluding the western portion of LU C27) is estimated at 78,179 hectares.

Spatially deployed OGMAs and Mature Seral Management Areas account for 12.5% of the timber harvesting land base, and require full retention of existing forest stands (with the exception of some selective removal under certain circumstances).

While the above table shows that 8.9% of the THLB is in OGMAs, the analysis in Appendix 23 of the Plan shows that the Landscape Unit Planning Guide (MoF) would have allowed a greater percentage to be set aside for OGMAs. As a result, the MSRM does not expect any negative volume implications from the spatially deployed OGMAs in the SRMMP. Similar analysis for other SRMMP objectives is not available, but MSRM staff believe that volume impacts will be very limited and perhaps slightly positive for short term timber supply, compared to previous management. Without a complete analysis of these objectives, incorporated into the timber supply model for the entire Cranbrook Timber Supply Area, it is not possible to definitively determine if there will be volume (AAC) implications, which in any event will be the decision of the Ministry of Forests' Chief Forester.

The table following indicates the expected incremental impacts (relative to current harvesting practices) of managing for non-timber values as specified in the SRMMP, on timber harvesting costs and volume in areas affected. This table is based on discussions with MSRM staff, Ministry of Forests staff and industry representatives. Industry representatives are less convinced that the SRMMP management objectives will not negatively impact available timber volumes, and are quite sure that there will be some significant logging cost increases associated with some of the management objectives.

Table 2 Timber Volume and Harvesting Cost Impacts of SRMMP Management Objectives

Management Objective	Volume Impact	Cost Impact	Source of Management Guidelines			
			KBLUP -IS	FPC	HLPO	SRMMP Contribution
Riparian	No change in riparian management (MSRM); industry expressed concern over perceived reserve zone requirements for S4, S5 and S6 streams; also 500 meter zones for Backcountry River Corridors seem inconsistent with KBLUP-IS	Flathead crossing limitations may increase logging costs (MSRM); industry indicates likely cost implications from Backcountry River Corridor crossing restrictions.	X	X		Flathead Enhanced Riparian Management
Old Growth/ Mature	HLPO relaxed mature requirements in LU 16,17,24,25,26, and 27 as well as some BEC units in others	Spatial designation of OGMAs/Mature should increase operating efficiency(MSRM), but industry indicates flexibility will be reduced		X	X	Spatial mapping of OGMAs and Mature retention areas
Wildlife Tree Retention	no change in management	May reduce planning effort as the plan provides interpretation of Wildlife Tree Retention tables		X		Plan provides interpretation of Wildlife Tree Retention tables
Wide-Ranging Carnivores (Core Grizzly Security)	100% retention in avalanche track adjacencies no significant volume impacts, very small total area	None, although it is unclear how some statements of intent will be implemented None	X		X	Interpretation and implementation SRMMP maps core grizzly habitat
Core Grizzly Security	No significant volume impact (MSRM)		X			
Ungulate Winter Range[1]	Increase in short term timber availability through reduced cover constraints	Activity restriction from mid Jan. to late March on UWR may have substantial cost implications if logging is forced to higher elevations with deeper snow	X	X		Changes in management and mapping for UWR were the product of the Kootenay Ungulate Winter Range Committee
Species at Risk	Unknown; need species at risk inventories and management plans	Unknown; need species at risk inventories and management plans	X	X		
Access Management	None	Access control could impose additional costs on industry. Alternatively costs related to existing public use may fall. Smaller, lower cost roads may be possible.	X			Recreation Management Strategy incorporated into SRMMP

Management Objective	Volume Impact	Cost Impact	Source of Management Guidelines			
			KBLUP -IS	FPC	HLPO	SRMMP Contribution
Connectivity	Matrix approach may produce lower impacts than KBLUP-IS corridor approach would have imposed; TSR2 did not model connectivity	Planning costs may be reduced	X		X	Implemented matrix approach rather than corridor approach suggested in KBLUP -IS
Community Watersheds	No new constraints	No new constraints	X	X		
Visual Landscapes	No change from existing (MSRM)	Visual impact analysis required	X	X	X	
Other Consumptive Streams and Watersheds	No change from existing	Some additional planning costs	X	X	X	

Notes:

1. Ungulate Winter Range management guidelines in the Kootenay region are not the same as elsewhere in the province, and are a recent product of the Kootenay Ungulate Winter Range Committee.

The SRMMP confirms the Enhanced Resource Development Zones for Timber (ERDZ-T) outlined in the Kootenay Boundary Higher Level Plan Order. No new management objectives are initiated by the SRMMP in respect of these areas, and it is unclear if any volume or cost advantages can be expected to result from these areas. Industry representatives questioned the efficiency of the location and layout of some of these areas.

The overall Plan emphasis on maintaining and/or enhancing wilderness attributes of the lower Flathead area may reduce the need or demand for protected area status, and a possible significant reduction in the timber harvesting land base.

Although there are still many aspects of the SRMMP which contribute to continuing forest industry uncertainty regarding access to an economic timber supply (industrial access management and several of the statements of intent with respect to non-timber values), it does deliver certainty in many areas that have been of concern to industry. Spacial deployment of old growth and mature targets, implementation of biodiversity emphasis, ungulate winter range management and connectivity provisions appear to be well specified in the SRMMP. This should relieve industry uncertainty about how these concepts, outlined in the broader strategic plans, will be implemented.

The forest products industry in B.C. is increasingly being required to demonstrate that it is managed and operated in a sustainable manner, while respecting and maintaining ecological and other non-timber forest values. The SRMMP should help in convincing forest product consumers, certification agencies, local residents and the world community that this is in fact the case in the Plan Area.

SUMMARY OF SOCIO-ECONOMIC IMPACTS OF THE PLAN ON **FORESTRY**:

- Positive timber volume influences from new Ungulate Winter Range management and the matrix approach to Connectivity, should offset any negative influences from Riparian or Backcountry River Corridor management objectives.

- Logging costs may increase as a result of management prescriptions relating to riparian areas, particularly in the Flathead area and from seasonal activity restrictions on Ungulate Winter Range; also, recreation access control may impose costs on licensees.

- Greater restrictions in the Flathead area may reduce demand for the establishment of more protected area in that region, which would prevent timber harvesting entirely.

- The spatial designation of OGMAs/Mature, the Connectivity Matrix and the SRMMP interpretation of Wildlife Tree Retention tables should reduce planning costs. Some of the savings in planning costs may be partially offset by the requirements for visual impact analyses and by additional costs related to planning for logging near consumptive streams and watersheds.

- All of the SRMMP management objectives are rooted to some degree in the EKLUP, the KBLUP-IS, the KB-HLPO or the Forest Practices Code.

- The SRMMP has at least partially delivered a tangible level of timber access and land management certainty.

- The SRMMP is likely to assist companies in achieving some levels of forest stewardship certification and in demonstrating to the wider community that sound forest management is being practiced. Vulnerability to product boycotts or production disruptions will likely be reduced.

OVERALL SOCIO-ECONOMIC IMPACT:
POSITIVE, neutral volume impacts with logging cost increases in some areas are at least balanced by the benefits of certainty and demonstrated good forest management.

3 Assessment of Plan Impacts on Backcountry Recreation and Tourism

3.1 Backcountry Recreation in the SRMMP Area

Backcountry recreation opportunities are very important to the residents of communities surrounding the Southern Rocky Mountain Management Plan area (there are no communities actually inside the Plan Area boundaries). Many people have chosen to live in this region, in part, due to the wide selection of backcountry recreation opportunities available.

Spring/Summer/Fall	Winter/Spring
• Angling	• Cat-skiing
• ATVs, motorbikes	• Heli-skiing
• Botanical forest products/ wood gathering	• Ski-touring
• Caving	• Snowmobiling
• Fossil gathering and fossil tours	
• Heli-hiking	
• Hiking, wildlife viewing, photography	
• Horseback trail riding	
• Hunting	
• Mountain biking	
• River rafting, canoeing, kayaking	
• Rock hounding & recreational prospecting	

The SRMMP area represents a significant portion of the land base in the region hosting these recreation activities. While the Plan Area offers some unique combinations of terrain, flora, fauna, wilderness and solitude to support these activities, most of these activities are also available and accessible on nearby lands outside of the Plan Area, including provincial crown lands, federal crown lands and large blocks of private land.

Appendix 2 provides an overview of the socio-economic importance of backcountry recreation activities in the SRMMP region.

3.2 SRMMP Recreation Management Strategy

The SRMMP incorporates a Recreation Management Strategy (RMS) that attempts to balance competing demands among recreational user groups and between residents and visitors while minimizing environmental impacts associated with recreation activities. The RMS specifies three major types of recreation management direction for the plan area:

- Ground based access management;
- Aerial based access management; and
- Recreation infrastructure development and use management.

In addition, the RMS provides guidelines for the use of BC Forest Service (BCFS) Recreation Sites and BCFS trails, and states the intent that "provincial Crown land will not be set aside in

the plan area for the purposes of establishing a route for the Trans-Canada Trail."

Other statements of intent include:

- Consistent application of management direction for both commercial and public recreation
- Guide development of new commercial recreation opportunities on Crown land
- Commercial recreation tenures issued prior to Jan.1, 2003 will 'be unaffected by' the RMS
- Industrial access is not constrained by the RMS

The RMS is also considered to be a crucial element of the conservation initiatives detailed in the public review draft SRMMP, and in particular, provisions for maintaining and improving wildlife habitat connectivity.

The intent that existing commercial recreation tenures 'be unaffected by' the RMS is probably not attainable. Where the activities promoted by commercial recreation tenures do not conform to the RMS management objectives, the tenures will likely be negatively affected if they are required to conform, or positively affected if they are not required to conform. If not required to conform, an unintended exclusivity benefit will be conferred that is likely to enhance the value of these tenures. At the time of this analysis, no information was available on the extent of conformity or non-conformity of commercial recreation tenures to the SRMMP in general, and the RMS in particular.

3.2.1 Ground Based Access Designations:

The SRMMP specifies five ground based access designations: RA1 designates the areas reserved for non-motorized activities, RA2 designates areas available for motorized activities with timing and/or location restrictions, RA2.1 and RA2.2 designate areas available for snowmobile use but otherwise non-motorized, and RA3 designates areas available for motorized and non-motorized uses.

The ground based access management objectives are expressed in the plan in a table and two maps, which cover both summer (April 15 to December 14) and winter (December 15 to April 14) access periods. The maps illustrate access management direction for the Plan Area, as well as additional lands which, combined with the Plan Area, form the Resource Evaluation Area referred to in Base Case documents.

The following table summarizes GIS data on the proportions of the Plan Area covered by the various ground based access management categories:

Table 3 Percent of SRMMP Area by Ground Based Access Management Category

Ground Based Access	Summer (% of Plan Area)	Winter (% of Plan Area)
RA1	99.6%	41.5%
RA2	0.4%	51.7%
RA2.1		2.9%
RA2.2		3.9%

Notes:

1. Source: GIS data supplied by Russ Hendry, MSRM
2. Does not include parks, federal or private lands but includes all of LU C27, much of which is outside the Plan Area.
3. Data received were adjusted to better conform to the RM tables in the SRMMP document.

The data suggests that the summer period access management is far more strict with respect to motorized access than the winter period. Motorized use in the summer period is restricted entirely to mapped road surfaces, whereas motorized use in the winter period is permitted across large blocks of Plan Area lands.

Much of the Plan Area is not physically accessible by ground based motorized means, and while the above data may have more significance for ecological values, they are not particularly illustrative of impacts on economic or social values. Ideally one would want to screen out those areas that are not physically accessible by motorized means, before undertaking an analysis of how much of the remaining lands fall into the various access management categories. Available time and resources did not permit such an analysis.

In assessing the impacts of the ground based access management objectives, it is assumed that these objectives will be implemented and enforced. There has been considerable concern and scepticism expressed by stakeholder groups about how access management will be implemented and enforced, and who will bear the economic and social costs of implementation and enforcement.

Activities that should be most benefited by the ground based access management objectives in the Plan Area are non-motorized activities including ski touring, mountain biking, hiking/wildlife viewing and horseback trail riding. The most severely constrained activities are those utilizing ATVs and motorbikes to access backcountry areas. In general, commercial recreation operators will likely receive more of the benefits of access management and be less inconvenienced by the restrictions involved, than public recreationists.

A stated objective of the RMS is to reduce conflicts between incompatible recreation activities in the backcountry. The extent and intensity of the existing levels of conflict is not clear, but there is little evidence to suggest that it is widespread. Appendix 17.0 of the SRMMP provides some background information, by landscape unit, derived from the RMS consultation process. While some 'overlap of incompatible uses' was noted in some of the landscape units, local agreements appear to have resolved most of the potential conflicts. Overcrowding from a social perspective does not appear to be a problem at present, except in some specific locations in landscape unit C24.

Much of the overlap of incompatible winter recreation activities occurs in the Fernie 'snow belt' area where proximity to the major population and tourism centre combines with the best snow conditions to create competition between cat-skiing, snowmobiling and ski touring for the best locations. While local agreements between clubs representing the different uses have been very helpful in avoiding conflict in specific areas, these clubs do not represent all users. Non-club members and the increasing number of visiting recreationists have compromised these local agreements to some extent.[14]

For the overall Plan Area, the ground based access management objectives appear to be more concerned with heading off potential future conflicts arising from incompatible recreational uses, than dealing with widespread existing incompatibilities. There is a twenty year history of demand for access management in the Plan Area, but this appears to have been driven more by ecological concerns than social conflict concerns.[15]

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[14] Pat Gilmar, Elk Valley Ski Touring Association – personal communication
[15] See draft SRMMP Appendix 24.3.6 - Strategic Access Management Planning

3.2.2 Aerial Access Designation:

The SRMMP specifies aerial access zoning including RH1 which discourages aerial access, RH2 which designates some point locations for landing and RH3 which allows aerial access.

The entire Plan Area is designated RH1 (aerial access discouraged) for both the summer and winter periods, with the exceptions of a few (maps and tables in the draft plan do not seem to agree) RH2 point landing sites for backcountry ski touring. The are no RH3 (aerial access permitted) lands in the Plan Area.

The SRMMP is clear that helicopter-dependent commercial recreation tenures will be discouraged in the Plan Area, and that commercial heli-skiing, heli-hiking, heli-angling and heli-biking are precluded by the SRMMP. Less clear is how the RH1 designation will apply to non-commercial recreation activities.

The potential for commercial heli-skiing in the Plan Area is limited by slope, terrain, snow quality and avalanche hazard conditions.[16] It would be difficult for operators in the Plan Area to compete with heli-skiing operations in more suitable areas of the province. There does appear to be some potential for commercial and/or recreational heli-aided hiking, mountain biking and angling in the Plan Area, which would be curtailed or foreclosed by the SRMMP. This is traded off for preservation of ecological values and the opportunity to provide an outdoor recreation venue where heli-aided activities are not permitted, perhaps establishing the region as a major destination for this market segment. This would appear to be at odds with the intent of increasing the yield per visitor stated in the SRMMP chapter on tourism, as revenues (and expenses) from heli-aided activities are generally much higher than those from strictly ground accessed activities.

3.2.3 Recreation Management Zones (RM1 to RM4)

Recreation Management Zones outlined in the SRMMP are intended to channel recreation facility development and recreation use intensity to the most appropriate areas, given the overall ecological and social objectives of the plan. These zones reinforce, to a large extent, the existing development and use patterns in the plan area.[17]

The four management zone classifications range from the lowest levels of facility development, recreation use and managerial presence (RM1) to the highest (RM4). The classifications are not mapped in the public review draft SRMMP, but rather are fairly vaguely described in a table by landscape unit. GIS data developed by MSRM[18] indicates the following breakdown of the Plan Area by recreation management zone:

[16] Bob Jamieson and Greg Goodison - personal communications
[17] Stephen Flett, MSRM – personal communication
[18] Russ Hendry, MSRM, March 18/03; data have been adjusted to conform better to the SRMMP document.

Table 4 Percent of the SRMMP Area by Recreation Management Zone

Rec. Management Classification	Summer (% of Plan Area)	Winter (% of Plan Area)
RM1	66%	32%
RM2	34%	68%
RM3	0%	0%
RM4	0%	0%

1. Does not include parks, federal or private lands but includes all of LU C27, much of which is outside the Plan Area.
2. Data received were adjusted to better conform to the RM tables in the SRMMP document.
3. No RM3 area is shown in this data, even though some RM3 zones are mentioned in both Section B.7.0 of the SRMMP and Appendix 17.0 of the SRMMP.

Consistent with the ground based access management objectives, the recreation management objectives provide for more extensive use and development of the Plan Area land base in the winter period than in the summer period.

There are several anomalies between the three sources of data on RM zones (Table B.7.1.2, Appendix 17.0 and the GIS data) that had not been reconciled before the submission of this report. In addition, it is not clear in the public review draft SRMMP where the RM zoning is primarily concerned with activity levels and where it is primarily concerned with infrastructure development. One must presume that where an area (say LU C16) is zoned differently for the summer period (RM1) and the winter period (RM2), the more restrictive summer zoning applies to both periods in respect of infrastructure development.

The RM designations, in general, are consistent with other provisions in the public review draft SRMMP that put the greatest emphasis on ecological conservation in landscape units C14 and C18, but also discourage permanent structure development anywhere in the Plan Area outside of landscape unit C24. Objective 9.9.6 in the SRMMP, with respect to preserving connectivity, states that expansion of, or new, permanent recreation or tourism-related facilities are not permitted in the inoperable connectivity or ungulate winter range in landscape units C14, C16, C18 and C23.

Replacement and/or upgrading of existing recreation or tourism-related facilities are permitted. As demand for wilderness lodge experiences increases, these 'grand fathered' facilities will likely be upgraded and used more extensively.

3.2.4 Forest Service Recreation Sites and Trails:

The SRMMP Recreation Management Strategy lists the various uses allowed for each Forest Service Recreation Site. These uses have been previously prescribed as legal objectives under the Forest Practices Code. For the most part the objectives for the sites and trails conform to the recreation access and development management strategies outlined elsewhere in the SRMMP. There are some anomalies that will need to be addressed in operational planning for some areas.

A subjective assessment of the use trends for these sites and trails[19] indicates growing use by visitors to the region but with area residents remaining by far the dominant users, increasing use of the trails but not necessarily the camping and picnic sites, and extensive use of some sites by visitors during hunting season.

As the Ministry of Forests diminishes its role in managing and maintaining these sites and trails, there has been some interest from recreation clubs to assume those responsibilities for some sites, but very little interest to date from potential commercial operators.

To the extent that SRMMP recreation access and use designations on lands surrounding these sites and trails conforms with the stated objectives of each site and trail, the SRMMP should enhance the value of these crown land assets.

3.2.5 Trans-Canada Trail

The SRMMP states the intent that no provincial crown land will be set aside in the Plan Area for establishing a route for the Trans-Canada trail. The currently publicized route uses Highway 3, Highway 43 and the Elk River Forest Service Road, all of which run along the boundaries of the Plan Area, to reach Elk Pass and the BC/Alberta border.

The proposed Upper Elk Valley route for the trail has been very contentious, with some favouring a dedicated trail adjacent to the Elk River Forest Service Road and others being opposed to any route through the Upper Elk Valley.

North from Elkford, the trail would run 80 kilometres through largely unserviced wilderness, which would not be ideal for the type of bicycle touring that has become popular on other parts of the Trans Canada trail (Kettle Valley railway corridor). A dedicated trail would likely be popular for ATV and snowmobile use, which may attract visitors to Elkford, as well as provide more motorized recreation options for residents.

3.3 Resident Hunting

The SRMMP notes the importance of resident hunting throughout the Kootenay region and in the Plan Area in particular. Although resident hunting effort has declined by half throughout the province since the early 1980's (Appendix 2, Chart 1), as well as in the Plan Area (Appendix 3, Tables 14 and 15), it is still a very popular activity that provides significant net economic value to BC residents.

Table 8 in Appendix 3 provides an estimate of how much resident hunters in the Plan Area would be willing to pay for their hunting experiences over and above the costs that they actually incur (this measure is termed 'consumer surplus' or 'net economic value'). The table shows that in the 2001 hunting season, resident hunters in the Plan Area experienced nearly $2.4 million in net economic value from the activity. Most of this was generated through hunting for Elk, White Tailed Deer and Mule Deer.

The impacts of the SRMMP on resident hunting activity are likely to be a mix of positive impacts emanating from objectives directed at maintaining wildlife populations and controlling motorized access, and negative impacts for some hunters resulting from motorized access restrictions.

[19] Neil Shuttleworth, Ministry of Forests, personal communication

The perception of greater control and regulation associated with the RMS should not be a major factor for resident hunters, since most hunting excursions involve advance planning, including consulting local regulations outlined in the Hunting Regulations Synopsis.[20]

3.4 Resident Angling

Most of the angling effort in the Plan Area is focused on rivers and streams, as lakes in the area are small and relatively rare. Cutthroat trout (a blue-listed vulnerable species) and mountain whitefish are the most frequently caught fish species, while bull trout (a blue-listed vulnerable species) is the largest indigenous fish in the area. The rivers and streams in the Plan Area are subject to a variety of seasonal closures, catch & release rules, catch quotas, gear restrictions and boating restrictions.[21]

Crowding in the most popular locations (mid-to-lower Elk River) has been increasing over the past decade, as noted in a recent creel survey for the Elk River. [22] The survey found that angling effort on the Elk River between Sparwood and Elko was comprised of 19% guided anglers and 81% non-guided anglers, and that 99.8% of all fish caught were released. Of the estimated 10,719 anglers, 79% lived outside of B.C. (49% from the United States, 28% from Alberta), with 23% of those living outside B.C. being guided (mostly U.S. residents).

Data in Appendix 2 of this report suggest that BC residents spend about $340,000 on angling in the Plan Area.

The SRMMP states an intent to maintain angling opportunities in the Plan Area, to balance the demand among resident anglers, non-resident anglers and angling guides, and to maintain a quality recreation fishing experience. There are no specific management objectives in the SRMMP to support these intentions, other than those related to access and habitat preservation.

Habitat preservation measures should support fish populations, which will be beneficial to resident anglers. Motorized land based access management restrictions may enhance the angling experience for some anglers, but may limit opportunities for others.

3.5 Backcountry Tourism in the SRMMP Area

The plan area supports a diverse tourism sector from front-country lodges and resorts to a variety of wilderness-related products that depend on the land base and stand to be affected by the SRMMP guidelines. The front-country and backcountry tourism operations are to some degree dependent on each other. Tourists use front-country accommodations as a base from which to access the backcountry, and tourists attracted to front-country operations such as the Fernie Alpine Resort may become aware of, and patronize, backcountry tourism operations.

The SRMMP classifies backcountry tourism into three main product types: Adventure Travel,

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[20] B.C. Ministry of Water, Land and Air Protection, *Hunting and Trapping Regulations Synopsis 2002 – 2003*.

[21] B.C. Ministry of Water, Land and Air Protection *BC Fisheries, Freshwater Fishing Regulations Synopsis 2003 – 2004*.

[22] Heidt, K.D., *Elk River Creel Survey 2002*, prepared for BC Ministry of Water Land and Air Protection, Cranbrook, B.C., page 19.

Hunting/Guide-Outfitting, and Angling/Guiding. There are about 70 backcountry tourism operators in and around the Plan Area, including 11 hunting guide outfitters and 21 guided angling operations.[23] The socio-economic contribution of those operators is detailed following and in Appendix 3.

3.5.1 Adventure Travel Commercial Operators

Adventure travel operators in the SRMMP area are important contributors to the regional economy, although their socio-economic impacts are considerably less significant than the public recreation sector. There are an estimated 30 to 40 adventure travel operators in and around the Plan Area, with about 15 of these having commercial recreation tenures. These operators generate about $5.2 million in gross revenues (the majority of which flow from Island Lake Lodge's operations) and yield an estimated $395,000 in net economic value to the province (see Appendix 3 for details of these estimates).

The public review draft SRMMP makes various statements of intent relating to tourism, including increasing the length of stay and yield, reducing conflicts between resource users, and managing growth to help minimize environmental impacts. The only resource management objective specific to tourism in the SRMMP is to discourage helicopter dependent commercial tenures. This objective may be very significant in limiting the range of products offered by adventure travel operations.

The SRMMP specifies that existing commercial tenures will be 'grand fathered' where they do not conform to the Recreation Management Strategy. This may confer an exclusivity benefit on operators offering motorized activities in non-motorized zones, but the extent of nonconforming tenure has not yet been analysed. In general, the recreation access management provisions in the SRMMP should benefit commercial recreation operators, providing for marketing and delivery of a more consistent recreation experience. Restrictions on motorized activity in the Plan Area in the summer period will limit the products and experiences that can be offered.

The SRMMP discourages backcountry lodge development, for which there appears to be some potential. Existing lodge and cabin sites will likely benefit, as they become more fully utilized.

3.5.2 Guide-Outfitting

There are eleven mutually exclusive guide-outfitting tenures in the SRMMP area, covering the entire Plan Area except landscape unit C23. The SRMMP specifies that there will be no new guide-outfitting tenures created in the Plan Area, and no expansion of tenures to landscape unit C23. Other elements of the SRMMP which impact guide-outfitting include the Recreation Management Strategy and Conservation measures to preserve and enhance wildlife habitat and populations.

Appendix 3 provides a description of the guide-outfitting industry in the Plan Area, and some measures of its socio-economic significance. The eleven guide-outfitters (whose territories extend beyond the Plan Area in many cases) generate about $2.2 million in gross revenues, 33 person

[23] Jamieson, B., D. Brooks et al, page 47.

years of employment, $235,000 in direct government revenues and an overall net economic value to the province of about $400,000 per annum.

The SRMMP is expected to have a very positive impact on existing guide-outfitting operations, by enhancing wildlife populations and controlling motorized public access to guide-outfitting territories. Depending upon how the market demand for wilderness, non-motorized hunting excursions evolves, the positive impacts of access management on future operations may be enhanced or muted.

Restrictions on the development of backcountry recreation and tourism facilities, coupled with the ability to upgrade or replace existing structures, should increase the value of guide-outfitting lodges and cabins (or their sites) in the Plan Area.

3.5.3 Guided Angling

There is a provincial review underway of angling and fishing effort in the East Kootenay area. The intent of the provincial review is to license and ultimately limit guided angling effort for certain fisheries.

Extrapolating data from the Elk River Creel Survey[24], Appendix 3 to this report derives an estimate of total gross angling guide revenues to BC guides of $1.2 million in the Plan Area. In addition to this there is an unknown amount of illegal guiding activity by out of province guides. Guided angling occurs primarily on the Elk River, but there is also some use of the Bull, Wigwam and Flathead Rivers.

The public review draft SRMMP states the intent to reduce the level of angling guide pressure within the Plan Area to maintain viable angling guide businesses, sustain fisheries and the angling experience, and balance the demand among resident anglers, non-resident anglers and angling guides. There are no specific management objectives in the SRMMP to accomplish this intent.

Provisions in the SRMMP to conserve and enhance fish habitat should be beneficial to angling guides' businesses. Motorized access restrictions in some areas will have either a positive or negative impact on angling guides, depending on the experience they are trying to market. It is unclear whether heli-aided, guided angling trips will be permitted in the Plan Area.

3.6 Assessment of SRMMP Impacts on Backcountry Recreation and Tourism

The following table summarizes the influences of the SRMMP on backcountry recreation and backcountry tourism for each major activity. The table indicates aspects of the SRMMP guidelines that may stimulate or frustrate each activity, and then presents a judgement on whether the net impacts on commercial operators and recreationist/adventure tourists are positive or negative.

[24] K.D. Heidt, *Elk River Creel Survey 2002 - Quality Waters Strategy*, BC Ministry of Water, Land and Air Protection, 2002.

Table 5 Assessment of SRMMP Impacts on Backcountry Recreation and Tourism

	Stimulate Activities	Frustrate Activities	Net Impact on:	
			Commercial Operators/ Tourism	Recreation
Snowmobiling Popular destination for snowmobiling; strong interest in acquiring commercial tenures	+ Certainty of access reduces conflict	- Reduced access in some areas may discourage snowmobilers (Flathead, Wigwam, Upper Elk Valley)	Neutral	-
Ski Touring Popular destination for ski-touring	++ Should enhance activities by providing non-motorized areas, increase quality of experience by eliminating conflicts with motorized recreation	- concentration of motorized users increases in some areas, restrictions on heli-aided experience	+	+
ATVs, Motorbikes Popular activity for local residents; used in conjunction with other recreation activities such as hunting, berry picking, wood gathering, and general access to backcountry.	+ Marginal positive impact by designating roaded areas where ATVs and motorbikes are clearly permitted.	- - Significant negative impacts associated with closed areas; restriction to roads reduces range of experiences; no off road 'play' areas; crowding ATVs into selected areas may increase conflicts and operating risks in those areas	-	- -
Mountain Biking	+ + Should enhance activities by providing non-motorized areas. Increase quality of experience by eliminating conflicts with motorized recreation.	- Restrictions on heli-aided commercial recreation reduces the range of potential experiences.	+	+
Hiking/ Wildlife Viewing including Photography	+ + Restrictions on motorized use should enhance experience. Protection of wildlife habitat should maintain or increase wildlife populations.	- Motorized use and access restrictions may limit opportunities, particularly for the less physically capable.	+ +	+
River Rafting, Canoeing, Kayaking		- Possibly some impacts from access restrictions.	Neutral	Neutral
Heli-skiing		- Heli-skiing operations will not be permitted, but potential for activity is not considered to be high.	-	?
Cat-skiing	+ Motorized access restrictions reduce potential conflicts for existing operators.	- Motorized use and access restrictions may reduce opportunities for new operators.	Neutral	N/A
Heli-Hiking		- - Commercial heli-hiking operations will not be permitted, pre-empting some potential for commercial operations. Impacts on independent recreation charters are not clear.	- -	?

	Stimulate Activities	Frustrate Activities	Net Impact on:	
			Commercial Operators/ Tourism	Recreation
Horseback Trail Riding	+ + Motorized access restrictions will enhance trail riding experience	- Restrictions on motorized access may limit opportunities to get to trail heads in some areas	+ +	+ +
Caving Tours; Fossil Gathering and Fossil Tours		- Restrictions on motorized access may limit opportunities in some areas	-	-
Botanical Forest Products (e.g. berry and mushroom picking); Wood Gathering; Rock Hounding & Recreational Prospecting		- Restrictions on motorized access may limit in some areas	N/A	-
Camping at Recreation Sites	+ Motorized access restrictions will enhance experience at non-motorized sites and trails		+	+

SUMMARY OF SOCIO-ECONOMIC IMPACTS OF THE PLAN ON **BACKCOUNTRY RECREATION**:

- The SRMMP restrictions will positively impact non-motorized activities throughout the year. Activities will have dedicated non-motorized areas, but can also continue to use areas that allow motorized access.
- The restrictions on summer motorized access will have negative impacts on certain activities such as botanical forest product gathering, wood gathering, and for recreational users who are seniors, handicapped, or young families who cannot easily access the backcountry.
- The restriction of heli-aided activities reduces the range of experiences available to recreationists.
- The negative aspects of access restrictions imposed by the public review draft SRMMP will be more pronounced for resident recreationists, whose activities tend to be more spontaneous, than for commercial tourism operators.

OVERALL SOCIO-ECONOMIC IMPACT: **POSITIVE**

SUMMARY OF SOCIO-ECONOMIC IMPACTS OF THE PLAN ON **BACKCOUNTRY COMMERCIAL TOURISM OPERATORS**:

- The Recreation Access Management zoning is generally beneficial to commercial tourism operators, in enhancing their ability to deliver a consistent experience to clients.
- The restrictions on motorized access are not as constraining to commercial operators, as they can more easily choose where to operate.
- Constraints on heli-aided commercial tourism operations reduce the options available to commercial adventure tourism developers.
- Restrictions on backcountry lodge development may preclude some significant market opportunities, and/or confer benefits on existing lodge and cabin owners.

OVERALL SOCIO-ECONOMIC IMPACT: **POSITIVE**

3.7 Assessment of SRMMP Impacts on Hunting and Angling

	Stimulate Activities	Frustrate Activities	Net Impacts
Guided Angling	+ Experience enhanced by maintaining fish habitat and restrictions on motorized access	- Restrictions on motorized access may limit opportunities in some areas. Impacts on heli-aided angling trips unclear. - Stated intent to ration guided angling activity in some areas	Neutral (stated intent to ration guiding activity is not backed by specific management objectives in SRMMP)
Resident Angling	+ Experience enhanced by maintaining fish habitat and restrictions on motorized access. + Intent to ration guided angling activity.	- Restrictions on motorized access may limit opportunities in some areas for some anglers	Neutral (stated intent to ration guiding activity is not backed by specific management objectives in SRMMP)
Guided Hunting	++ Motorized use and access restrictions will enhance guided horse hunting experience. Habitat preservation and restrictions on human disturbance should help to maintain wildlife populations	- Restrictions on motorized access may limit the ability of some operations to adjust to future changes in product demand	+ (may be very positive if market for non-motorized, wilderness hunting experience remains strong and supply diminishes elsewhere)
Resident Hunting	+ Restrictions on motorized use and access may enhance experience for some hunters. Habitat preservation and restrictions on human disturbance should help to	- Restrictions on motorized use and access will limit hunting opportunities for some hunters	Undetermined (no indicators of the relative popularity of non-motorized versus motor-aided resident hunting)

	Stimulate Activities	Frustrate Activities	Net Impacts
	maintain wildlife populations		

4 Assessment of Plan Impacts on Agriculture and Trapping

4.1 Agriculture

Cattle ranching is the most common form of agriculture in the Plan Area, and access to crown lands for grazing is crucial to the viability of these operations. The Socio-Economic Base Case estimates that there are 5 ranchers grazing livestock in the Plan Area[25].

Suitable grazing land is a very scarce resource in the Plan Area[26], which results in competition between domestic livestock and wildlife for forage opportunities. Objectives 5.0.1 through 5.0.4 (which follow direction from the EKLUP and KBLUP-IS) restrict expansion of livestock grazing, while some of the statements of Intent support enhancing forage production from existing range lands.

The potential for other forms of agricultural production in the Plan Area appears to be very limited by the growing season, terrain, and soil conditions.

The SRMMP offers little potential to expand livestock grazing opportunities on crown lands, but does support more intensive management of existing range lands to increase forage production. The overall impact of the Plan on agriculture in the Plan Area is assessed as neutral.

4.2 Trapping

There are about 25 licensed traplines, either entirely or partially within the Plan Area. The average gross income from a trap line is estimated at about $2,500 per annum[27], for a total industry gross revenue of $62,500 per annum. There appears to be potential for trapping revenue to increase on existing traplines through increased trapping effort.

Management Objective 6.0.1 of the SRMMP restricts the number of licensed traplines in the Plan Area to 24, or approximately the current number. Conservation measures within the Plan to maintain or enhance wildlife habitat and populations should be beneficial to the trapping industry. Motorized recreation access restrictions (which do not apply to licensed trappers) should also be beneficial in reducing potential disturbance to trapline operations. The overall impact of the Plan on trapping in the Plan Area is assessed as positive.

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[25] Holeman,Gary and Pierce Lefebvre Consulting, 2002, Pg. 55

[26] Under the Canada Land Inventory classification system, on a scale of 1 (best) to 7 (worst) a large majority of the Plan area lands are classified in the Class 4 to Class 7 range for both agriculture potential and ungulate capability. See http://geogratis.cgdi.gc.ca/cgi-bin/geogratis/cli/ungulates.pl.

[27] Bill Warkenton, WLAP.

5 Assessment of Plan Impacts on First Nations

The entire SRMMP Plan Area falls within the Ktunaxa Nation's Traditional Territory. The Ktunaxa are currently at Stage 4 of the 6-stage Treaty Process, which is neither limited, nor intended to be limited, by the SRMMP.

The Ktunaxa have expressed concern about their limited capacity to effectively participate in the planning process, and do not consider the consultation that occurred prior to publication of the draft plan to be meaningful or adequate.

The Socio-Economic Base Case for the SRMMP noted some of the interests and concerns expressed by Ktunaxa representatives at the outset of the planning process, including:

- Support of environmentally sensitive timber harvesting and a desire to become more involved in the forest industry,
- The impacts of logging operations on fish and wildlife,
- The need to integrate timber harvesting with other sectors such as tourism, trapping, hunting, fishing and other traditional, spiritual and commercial uses, and
- The need to preserve archaeological and cultural sites.

The SRMMP states the intent to provide for cultural, economic and environmental interests of the Ktunaxa, and to continue to pursue consultation with the Ktunaxa Nation.

In the course of this assessment, no effective facility or mechanism was established to gather information on how the SRMMP may impact the interests of the Ktunaxa Nation, and no assessment of those impacts is therefore attempted.

6 Assessment of Plan Impacts on Settlements

The SRMMP has the general objective of reinforcing the Highway 3/43 settlement corridor and discouraging settlement elsewhere in the Plan Area. With populations declining in the Plan Area over the past 20 years, there is limited pressure to open new settlement areas, or expand the existing ones, with the exception of the recent expansion of Fernie and the Fernie Alpine Resort ski area. Census population data do not capture the emerging 'shadow population' in the Elk Valley[28], associated with recreational property demand and the 4-on,4-off shift rotation at the coal mines. This 'shadow population' is driving much of the demand for new housing and new housing types in the Elk Valley, and the number of private occupied dwellings is rising in all three communities, in spite of Census population declines.

All three of the major communities adjacent to the Plan Area are very dependent upon the coal mining industry for direct employment opportunities, indirect economic activity, social infrastructure and municipal tax base. Forest industry impacts are also significant in Sparwood and Fernie, and particularly the community of Elko (unincorporated) to the west of the Plan Area.

The decline in coal sector employment over the past 15 years brought some urgency to diversification strategies initiated by Fernie (founded in 1898), Sparwood (incorporated in 1966) and Elkford (incorporated in 1971)[29]. A key component of these strategies is the development of tourism potential, which is the focus of a Tourism Opportunity Strategy currently being developed for the Southern Rocky Mountain Area[30].

Fernie has had the greatest degree of diversification success to date, building upon the rapid expansion of the Fernie Alpine Resort (330,000 skier days in 2001/2002 season[31]). The Socio-Economic Base Case for the SRMMP[32] noted some indications that the growth in tourism employment (+48%) evident in the 1981 to 1996 labour force data, has accelerated since 1997 with the expansion of the Fernie Alpine Resort. Recently released 2001 Census Canada labour force data confirm this trend, with the Accommodation & Food Services labour force surging ahead by 77% (from 280 to 495)[33] between 1996 and 2001 in Fernie, while remaining constant in Sparwood and Elkford.

Impacts of the SRMMP will be felt in Fernie, Sparwood and Elkford, but also in Elko, Jaffray, Tobacco Plains Reserve and other Rocky Mountain Trench communities to the west of the Plan Area. Cranbrook, as the administrative centre, forest industry centre and air access gateway for the southeast Kootenay region, also relies to some extent on the timber resources, wilderness attributes and abundant wildlife populations of the Plan Area.

In general, coal industry impacts from the SRMMP will be experienced in Fernie, Sparwood and

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[28] Jamieson, B., D. Brooks et al, 2003.

[29] For example see Crane Management Consultants, *Elk Valley Economic Development Implementation Strategy*, prepared for BC Ministry of Small Business, Tourism and Culture, 1994

[30] Jamieson, B., D. Brooks et al, 2003

[31] Melody Kultgen, Fernie Alpine Resort, personal communication.

[32] Holman, Gary and Pierce Lefebvre Consulting, 2002

[33] BC Stats, from 2001 Census Canada data. The change in industrial classification systems employed for labour force data between the 1996 Census and the 2001 Census makes comparisons of other sectors difficult, but the Accommodation and Food sector corresponds well between the two classification systems.

Elkford, and forest industry impacts in Elko, Jaffrey and Cranbrook. The SRMMP adds some certainty of access to resources for the mining and forest industries, which should result in some increase in confidence in the basic viability of the affected communities. This impact will likely be difficult to detect, however, in the face of the many other regulatory, operating and market uncertainties faced by these industries.

SRMMP impacts on recreation and tourism will be felt in all of the communities mentioned above. The impacts on resident recreation will largely reinforce the lifestyle choices made by the existing populations in these communities. It appears as though past patterns of recreational use and activity have been defended in the Plan, in the face of new motorized technologies that threaten to erode the enjoyment of these activities in many areas.

Elkford appears to be the most vulnerable of these communities, with its almost total economic reliance on the coal mining industry, and its location well off of the Highway 3 tourism corridor. Elkford is the least likely to capture spin-off tourism activity associated with Fernie based tourism development, and along with Sparwood suffers a substantial amount of leakage of economic activity to Alberta communities[34].

The SRMMP management objectives should not have any significant impact on Elkford's industrial base, but they may reduce the already limited options for tourism development. The Recreation Management Strategy is quite restrictive with respect to motorized and helicopter access in the Elkford area. While this may enhance opportunities for non-motorized tourism and recreation, and may have significant ecological benefits, these benefits likely come at the cost of reducing motorized recreation activities. As noted earlier, however, Elkford has difficulty capturing the economic benefits of recreation activity. There is not sufficient information available on the net socio-economic value of motorized and non-motorized activities (net of any ecological costs) to evaluate this trade-off, particularly with the economic 'leakage' complication.

[34] Jamieson, B., D. Brooks et al, 2003,Pg. 18

7 Summary and Conclusions

In general, the public review draft SRMMP appears to facilitate economic activity, while balancing social concerns related to outdoor recreation, by:

- Delivering tangible degrees of certainty of access to crown land resources for extractive industries, which anchor the economies and basic viability of adjacent communities;
- Zoning the SRMMP land base to accommodate a variety of outdoor recreation activities and commercial tourism operations;
- Maintaining wilderness and wildlife values supporting the guide outfitting industry and recreational hunting; and
- Maintaining fish habitat supporting the guided angling industry and recreational angling.

By sector and/or activity, the Plan impacts are assessed as follows:

SRMMP Impact	Sector or Activity	Socio-Economic Significance in Plan Area	
		Current	Potential
Very Positive	Guide Outfitting	Modest	Modest
Positive	Metal and Mineral Exploration	Minor	Modest
	Metal and Mineral Mining	None	Modest
	Conventional Oil & Gas	None	Modest
	Coal Bed Methane	Minor	Substantial
	Forest Industry	Substantial	Substantial
	Guided Angling	Modest	Modest
	Trapping	Minor	Minor
	Non-Motorized Resident Backcountry Recreation	Substantial	Substantial
	Backcountry Adventure Travel Operators	Modest	Modest
Neutral	Coal Exploration and Mine Development	Minor	Substantial
	Coal Mining	None	Substantial
	Agriculture	Minor	Minor
Negative	Motorized Summer Resident Backcountry Recreation	Modest	Modest
	Recreational Snowmobiling	Modest	Substantial
	Heli-Aided Commercial Recreation	None	Modest
	Heli-Aided Resident Recreation	Minor	Modest
	New Backcountry Lodge Development	None	Modest

- Impacts are assessed as neutral or positive for most sectors or activities judged to have a substantial current or potential socio-economic impact. The exception is recreational

snowmobiling, which is thought to have substantial potential socio-economic impact, but will experience somewhat negative impacts from the SRMMP on balance.

- Negative impacts relate primarily to potential recreation or tourism activities that are not well established in the Plan Area.

- With respect to the tourism and recreation sectors the SRMMP appears to be oriented more toward "maintaining" existing economic and social activity patterns, than providing for new economic activities and social diversity. For example:

  - The Plan is very restrictive for summer motorized recreation;
  - The Plan forecloses on the likely modest opportunities to develop helicopter aided adventure tourism; and
  - The Plan is very restrictive with respect to developing backcountry lodges.

  These restrictions may have justification in supporting ecological or other socio-economic values, but it is important to note that they are not without cost.

- The Plan may confer unintended benefits on 'grand fathered' commercial recreation tenure holders whose licensed activities do not conform to the Recreation Management Plan zoning contained within the SRMMP.

- Plan restrictions on new backcountry lodges may confer unintended benefits on the owners of existing backcountry lodges and cabins that can be upgraded or replaced.

Appendices 5 and 6 summarize the socio-economic significance of the various industrial and recreational activities that take place in the Plan Area, and the SRMMP impacts on those activities.

APPENDIX 1 SRMMP MAJOR INDUSTRIAL SECTORS

The Socio-Economic Base Case for the Southern Rocky Mountain Management Plan (SRMMP) presents data on each major industrial sector. It is now becoming customary to assess socio-economic impacts associated with industrial development and other values based on 'net economic value'. According to MSRM guidelines, the net economic value from commercial sectors should consider[35]:

- **Public Sector Rent**: Government resource tax revenues are often used as a proxy for economic rents, for example stumpage revenues for the forest industry and oil and gas royalties and bonus bids in the case of the petroleum industry. In these instances, the government resource tax revenues are assumed to reflect product market prices less production costs (including a reasonable return on capital).

- **Rent Captured by Direct Labour**: Rent may accrue to labour, due to various labour market rigidities and "imperfections". Rent accruing to labour is very difficult to estimate and is perhaps best approximated by some fixed percentage of total direct labour costs for each sector.

- **Private Sector Rent Captured by Owners of Capital**: Rent may accrue to entrepreneurs who own or employ factors of production that are in relatively fixed supply. These rents are also very difficult to estimate, and can perhaps be best estimated by a percentage of total sales.

This Appendix summarizes key socio-economic impacts associated with the mining and forest sectors as presented in the Socio-Economic Base Case document, and estimates the net economic value from those two sectors based on those impacts.

Appendix 1-1 Mining Sector

Table 6 Mining Sector Employment, Industry Taxes and Net Economic Value

Mining Sector Employment Impacts	Multiplier	Total PYs	Annual Employment Income ($million)
Direct			
Coal Mining (outside SRMMP)		2,563	$169.9
Exploration (small portion of which is in SRMMP)		50	$2.5
Total Direct	1.00	2,613	$172.4
Indirect & Induced			
Regional	0.61	1,594	$54.3
Outside Region, within B.C.	0.69	1,803	$61.4
Sub-total Indirect & Induced	1.30	3,397	$115.7
Total B.C. Impacts	2.30	6,010	$288.2
Regional Impacts – Direct, Indirect and Induced	1.61	4,207	$226.7

[35] MSRM, *Socio-Economic and Environmental Assessment for Land and Resource Management Planning in British Columbia: Guiding Principles*, Draft for Discussion Purposes, January 2003.

Mining Sector Industry Taxes (B.C. and Municipal)	Annual $ Million
Mining and Mineral Taxes	$7.4 million
Property Taxes to Elkford, Fernie and Sparwood	$6.9 million
Other Industry Taxes (e.g. capital, income, sales, fuel taxes, etc.)	$16.9 million
Total	$38.6 million

Net Economic Value from Mining - Coal Mining and Mineral Exploration	Estimated Annual Net Economic Value
• Public Sector Rent (includes mining and mineral taxes)	$7.4 million
• Labour Rent (5% of direct wages and salaries)	$8.6 million
• Industry Rent (minimal)	Minimal
Total	$16.0 million

Notes: May not add due to rounding.

1. Total industry taxes are from the Socio-Economic Base Case Document and are based on the PriceWaterhouseCoopers report titled *The Mining Industry in British Columbia – 2000*; Property taxes are from discussion with industry.
2. Coal industry revenues are estimated at $750 million based on $30 per tonne (average price in 2000) and a production rate of approximately 25 million tonnes for the East Kootenay mines in 2000 (from Socio-Economic Base Case document).
3. Industry rents over and above normal returns are assumed to be minimal since between 1991 and 2000, the B.C. mining industry reported losses in 6 of the 10 years, therefore yielding an overall negative after tax return on shareholders' investment over the 10 years, therefore below what would be considered a "reasonable return on capital"; Source: PriceWaterhouseCoopers, 2000.

Source: Socio-Economic Base Case for the SRMMP, Appendix 2.

The net economic value of coal mining includes the five mines located just outside the Plan Area including Line Creek, Fording River, Coal Mountain, Greenhills and Elkview. The Net Economic Value from mining flows to the communities of Elkford, Sparwood and Fernie.

Appendix 1-2 Forestry Sector:

Primary forest products processing in the Cranbrook TSA generates 922 Person Years of employment (PYs). This translates to 0.52 PYs per 000 m3 harvested, which when added to timber harvesting and silviculture employment adds to 0.93 PYs per 000 m3.

Table 7 Forest Sector Industry Taxes, Employment and Net Economic Value

Timber Harvesting Land Base & Estimated Annual Timber Volume	Cranbrook Region	Cranbrook TSA	Plan Area
Timber Harvesting Land Base		407,058	78,179
Percentage			19.2%
Timber Volume	1,219,000	871,000	167,283

Government Revenues		Annual Revenues ($Million) Attributed to:	
	$ per m3	Cranbrook TSA	Plan Area
Stumpage and Related Payments	$16.45	$14.33 Mil	$2.75 Million
Other Forest Industry Taxes (logging taxes, income, capital, property, sales, and other)	$8.12	$7.07 Mil	$1.36 Million
Total	$24.57	$21.40 Mil	$4.11 Million

Forest Industry Employment Impacts - Primary Processing	Cranbrook TSA Log Input (000 m3)	Employment (PYs) (1)	Allocated PYs (1)	PYs/000 m3
Tembec Cranbrook		75		
Tembec Elko	910	223	293	0.322
Tembec Head Office		80		
Galloway Lumber	210	89	89	0.423
Smaller Operations	98.5	80	80	0.812
Total – Primary Processing	1,219	547	462	0.379
Secondary Processing:				
Tembec Pulp Mill: Skookumchuck		375		0.14
Sub-Total (2)		922		0.52
Other:				
Timber Harvesting				0.36
Silviculture				0.05
TOTAL PYs per m3				0.93

Forest Industry Impacts from Cranbrook TSA & SRMMP	Employment Coefficient, PYs per 000 m3	PYs Attributed to Cranbrook TSA	PYs Attributed to Plan Area	Annual Plan Area Income ($ million)
Direct Forest Products	0.93	809.2	155.4	$7.2
Indirect & Induced				
Regional	0.49	427.2	82.0	$2.8
Outside Region, within B.C.	0.68	590.4	113.4	$3.9
Sub-total Indirect & Induced	1.17	1,017.6	195.4	$6.7
Total Direct & Indirect	2.10	1,826.8	350.9	$13.9

Annual Net Economic Value		Cranbrook TSA $ Million	Plan Area $ Million
Public Sector Rent	$16.45 per m3 (stumpage)	$14.33	$2.75
Labour Rent	5 % of direct wages and salaries	$1.9	$0.4
Industry Rent	Minimal	Minimal	Minimal
ANNUAL NET ECONOMIC VALUE		$16.23	$3.15

Notes: May not add due to rounding

1. Some of the employment in Cranbrook is to reprocess wood that is manufactured in other Timber Supply Areas. The allocated PYs represent the wood processing employment that is assumed to depend on the fibre processed in the area (log input of 1.2 million m3). The Socio-Economic Base Case provides more detail on the assumptions that pertain to these estimates.
2. Employment excludes 37 PYs at the Cranbrook value-added mill.
3. Industry rents are considered minimal; between 1995 and 1999, the B.C. forest industry reported total earnings before taxes that averaged 0.8% of total sales revenues and a 5-year average return on capital of 2.9%, which is below what might be considered a "reasonable average return". PriceWaterhouseCoopers, *The Forest Industry in British Columbia, 1999.*

Source: Socio-Economic Base Case for the SRMMP, Appendix 2.

APPENDIX 2 BACKCOUNTRY RECREATION

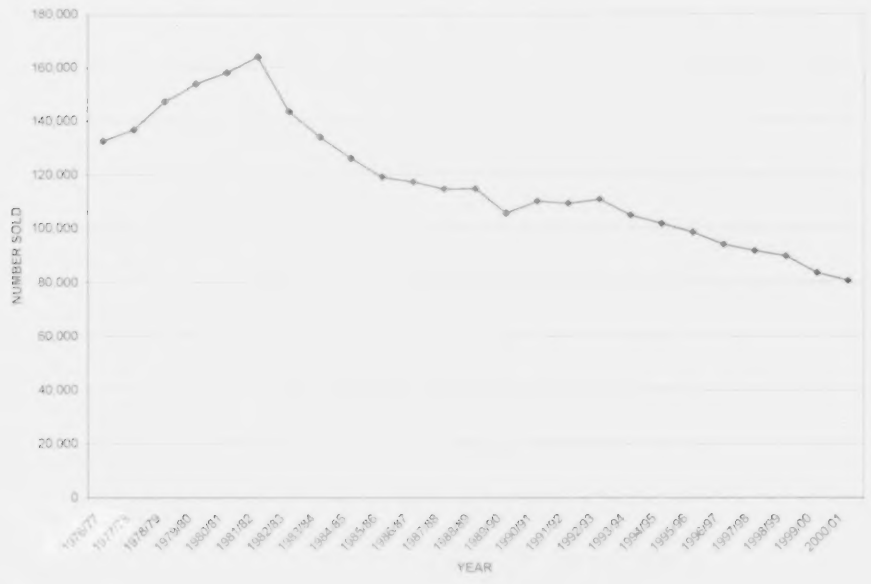
This Appendix reviews the socio-economic impacts associated with four major types of backcountry recreation including resident hunting, resident angling, wildlife viewing and snowmobiling.

Appendix 2-1 Resident Hunting

Large populations of several big game species have supported a long history of recreational and sustenance hunting in the SRMMP area. Hunting for elk, white tailed deer and mule deer accounts for about 85% of the hunting effort (hunter days) by BC residents in Wildlife Management Units that are entirely or partially within the SRMMP area (see Table 8).

The number of resident hunters and total hunting effort has been declining in the SRMMP area, and the province, since the early 1980s (Tables 14, 15, and Chart 1). Data from the BC Ministry of Water Land and Air Protection[36] indicate that the animal harvest and hunting effort by resident hunters declined substantially between 1984 and 2001. Comparing annual averages for the ten year period 1984 to 1993 (Table 14) with annual averages for the three year period 1999 to 2001 (Table 15), total animals killed fell from 2,545 per year to 1,122 per year (56% decline). Total hunter days (which is inflated through double counting when summed across species and management units) fell from 83,478 per year in the earlier period to 46,310 in the later period (45% decline). Most of this decline can be attributed to declines in elk, mule deer and moose hunting.

Chart 1 BC Resident Hunting License Sales 1976 - 2001



[36] BC Ministry of Water Land and Air Protection, Wildlife Allocation and Use Section, *Summary Statistics Data Base*, Victoria, 2001.

The 1995 BC Resident Hunter Survey[37] provided estimates of the value of resident hunting by species and geographic region. This survey used a contingent valuation method in conjunction with a survey of actual expenditures to determine the net economic value or consumer surplus associated with resident hunting activities. The table below reports the results for big game species hunted in the SRMMP area.

Table 8 Hunting Effort, Expenditures and Net Economic Value for the SRMMP Area

	Hunter Days 2001 Season[1]	Actual Expenditures/Day[2] ($2002)	Net Econ. Value/Day[3] ($2002)	Total Expenditures ($2002)	Total Net Economic Value ($2002)
Elk	14,485	$54.74	$52.56	$792,909	$761,318
White Tailed Deer	15,007	$38.68	$47.97	$580,470	$719,880
Mule Deer	10,284	$45.23	$48.51	$465,145	$498,944
Moose	339	$52.45	$53.65	$17,781	$18,188
Grizzly Bear	109	$118.77	$94.41	$12,946	$10,259
Goat	898	$112.66	$58.57	$101,169	$52,594
Mountain Sheep	1,740	$105.44	$88.18	$183,466	$153,461
Cougar	764	$92.00	$82.06	$70,288	$62,721
Black Bear	2,682	$63.59	$37.81	$170,548	$101,410
Total All Species[4]				$2,394,722	$2,378,774

Notes

1. Source: *Summary Statistics Data Base*, BC Ministry of Water Land and Air Protection, Wildlife Allocation and Use Section, Victoria; Wildlife Management Units 4-1, 4-2, 4-22, 4-23
2. Source: Roger Reid, *British Columbia Resident Hunter Survey 1995*, BC Ministry of Environment, Lands and Parks, Table 11. BC average estimated expenditures by species hunted, converted to $2002 using the Statistics Canada all items consumer price index for BC.
3. Source: Roger Reid, *British Columbia Resident Hunter Survey 1995*, BC Ministry of Environment, Lands and Parks, Table 17. Kootenay region average net economic value by species hunted, converted to $2002 using the Statistics Canada all items consumer price index for BC. Net economic value is consumer surplus measured through a contingent valuation method survey.
4. Total All Species may include some double counting, as many hunters hunt for more than one species at a time.

Appendix 2-2 Resident Angling

There is very little information available on the economic and social significance of resident angling activities in the Plan Area. Data from the Federal Department of Fisheries and Oceans 1995 National Survey of Recreational Fishing[38], indicates the following:

- 1995 freshwater angling effort in BC was 6,288,031 angler days.
- 13% of the effort (815,000 angler days) occurred in the Kootenay region.

[37] B.C. Ministry of Environment, Lands and Parks – Wildlife Branch, *The Economic Value of Resident Hunting in British Columbia, 1995*, Victoria.

[38] Joint BC Government-Sector Steering Committee, *BC's Freshwater Recreational Fishery: Setting Direction For The Future – Context Report*, 2002, pg. 19 and 20.

- Resident anglers accounted for 79% (645,000 angler days) of angling effort in the Kootenay region.

- Expenditures in BC on freshwater fishing in 1995 included $274 million in capital expenditures (gear, boats, vehicles, etc.), and $207 million in direct expenditures (accommodation, food, travel, rentals, fishing packages).

- The Kootenay region share of 1995 expenditures was 10% of capital expenditures ($27.4 million), and 13% of direct expenditures ($27 million).

- BC residents accounted for 96% of capital expenditures ($26.3 million), and 77% of direct expenditures ($20.8 million) in the Kootenay region.

The implied expenditures per resident angler day in the Kootenay region (from the third and sixth bullets above) are $40.78 in capital expenditures, and $32.25 in direct expenditures for a total of $73.03.

According to BC Ministry of Land, Water and Air Protection fishing licence data[39], the number of adult anglers in BC has remained relatively stable at about 300,000 BC residents and 80,000 non-residents over the past ten years.

More recent, and much more specific data are contained in a creel survey conducted in 2002 for the Elk River[40] (from Sparwood to Elko), the most popular sport fishery in the Plan Area. Data from the creel survey include the following:

- 10,719 angler days between July 1 and October 31, 2002.

- Non-guided anglers accounted for 8,697 angler days (81%) and guided anglers, 2,022 angler days (19%).

- BC residents accounted for 2,201 angler days (20.5%). The rest were Alberta residents 2,956 angler days (27.6%), US residents 5,265 angler days (49.1%) and Other 297 angler days (2.8%).

- Drift boat anglers accounted for 69% of angler days, 88% of angler hours and 89% of fish caught.

- 88% of fishers on the Elk River rated the quality of their angling experience as either Good (75%) or Excellent (13%).

The 2000 Survey of Recreational Fishing in Canada – Preliminary Results[41] shows the following values for expenditures on recreational fishing in BC:

- BC residents spent $299,832,369 (direct and capital) on recreational fishing in BC over 3,928,738 angler days, for an average of $76.32 per angler day.

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[39] Ibid, pg.17.

[40] K.D. Heidt, Elk River Creel Survey 2002 – Quality Waters Strategy, BC Ministry of Water, Land and Air Protection, Cranbrook, 2002.

[41] Federal Department of Fisheries and Oceans, *Survey of Recreational Fishing in Canada, Preliminary Results*, http://www.dfo-mpo.gc.ca/communic/statistics/RECFISH/new2002/sum2000_e

- Other Canadians spent $22,119,981 (direct only) on recreational fishing in BC over 212,131 angler days, for an average of $104.28 per angler day.

- Non-Canadians spent $56,038,125 on recreational fishing in BC over 261,129 angler days, for an average of $214.60 per angler day.

Applying 2000 national survey expenditure results for BC, to the Elk River fishery activity levels determined by the creel survey yields the following expenditure estimates:

Table 9 Recreational Fishing Expenditures in the Elk River, 2002

Place of Residence	Angler Days	Expenditure/Day	Total Expenditures
BC (direct and capital)	2,201	$76.32	$170,000
Other Canadian (direct)	3,145	$104.28	$330,000
Non-Canadian (direct)	5,373	$214.60	$1,150,000
Total	10,719		$1,650,000

Other popular fishing locations in the Plan Area include Wigwam River, Bull River, Lodgepole Creek, Flathead River and the Elk River north of Sparwood.

If one assumes that the Elk River (Sparwood to Elko) fishery attracts one third of the BC resident fishing effort, and two thirds of the Other Canadian and Non-Canadian fishing effort in the Plan Area, then total expenditures on fishing effort in the Plan Area may be as follows:

Table 10 Recreational Fishing Expenditures in the SRMMP Area

Place of Residence	Angler Days	Expenditure/Day	Total Expenditures
BC (direct and capital)	6,603	$76.32	$500,000
Other Canadian (direct)	4,718	$104.28	$490,000
Non-Canadian (direct)	8,060	$214.60	$1,730,000
Total	19,381		$2,720,000

Appendix 2-3 Wildlife Viewing

The SRMMP area supports an internationally reputed concentration and diversity of wildlife species, which can be observed, studied and photographed in a natural, and often spectacular setting. Residents of the area take advantage of this resource through a variety of activities that are either entirely, or partially directed towards viewing wildlife.

No direct measures of the extent of wildlife viewing activities in the Plan Area are available, however a provincial study on the economic value of these activities[42] provides some data from which an indication of the extent and value of these activities can be estimated.

The provincial study identifies three broad types of wildlife related activities: wildlife activities around the home, cabin or cottage; indirect wildlife activities, which are away from the home but incidental to the main purpose of a trip or outing; and direct wildlife activities, which occur away from the home and are the main purpose of a trip or outing.

[42] Roger Reid, *The Economic Value of Wildlife Activities in British Columbia, 1996* , BC Ministry of Environment, Lands and Parks, Victoria, 1998.

As part of the study, a household survey requested BC residents to indicate expenditures on the three types of wildlife activities.

Table 11 Expenditures on Wildlife Activities in Kootenay Region and SRMMP Area

Activity Type	Kootenay Region Expenditures[1] $1996	SRMMP Area Proportion[2]	SRMMP Area Expenditures $1996	SRMMP Area Expenditures $2002[3]
Home/Cabin/ Cottage	$5,196,900	7.5%	$390,000	$420,000
Indirect Activities	$3,506,900	7.5%	$260,000	$280,000
Direct Activities	$21,805,180	7.5%	$1,635,000	$1,770,000
Total Expenditures	$30,508,980	7.5%	$2,285,000	$2,470,000

Notes:

1. Source: *Roger Reid, Economic Value of Wildlife Activities in BC 1996*, Tables 18,19 and 20.
2. SRMMP Area Proportion is estimated as an average of 10% of the Kootenay Region population (18 and over) and 5% of the Kootenay Region land area.
3. Adjusted using Statistics Canada consumer price index, BC all items.

While gross expenditures give some indication of the economic impact and value of these activities, a better measure is the net economic value, which estimates net utility of these activities to participants engaging in them. This is measured by estimating how much more people would be willing to pay to engage in these activities, than they actually did pay.

The household survey employed a contingent valuation method to estimate net economic value by region as outlined in the table following.

Table 12 Net Economic Value from Wildlife Activities, Kootenay Region & SRMMP Area

Activity Type	Kootenay Region Net Economic Values[1,2] $1996	SRMMP Area Proportion[3]	SRMMP Area Net Economic Values[2] $1996	SRMMP Area Net Economic Values $2002[4]
Indirect Activities	$6,251,800	7.5%	$470,000	$510,000
Direct Activities	$77,476,280	7.5%	$5,810,000	$6,290,000
Total	$83,728,080	7.5%	$6,280,000	$6,800,000

Notes:

1. Source: *Roger Reid, Economic Value of Wildlife Activities in BC 1996*, Tables 28 and 29.
2. Net Economic Value is consumer surplus, measured through a contingent valuation survey.
3. SRMMP Area Proportion is estimated as an average of 10% of the Kootenay Region population (18 and over) and 5% of the Kootenay Region land area.
4. Adjusted using Statistics Canada consumer price index, BC all items.

The above estimates of expenditures and net economic values indicate that for direct wildlife activities in particular, the net economic value derived from the activity is far greater than its actual cost (for the Kootenay Region, residents spent an average of $17.40 per recreation day on direct wildlife related activities in 1996, but derived $44.60 per recreation day in net economic value from the activities)[43].

[43] Roger Reid, ibid, Tables 27 and 28.

Appendix 2-4 Snowmobiling

Snowmobiling in the SRMMP area is a popular winter recreation activity for the residents of communities immediately adjacent to the Plan Area, as well as for other Southeast Kootenay residents. Residents of Southwest Alberta also make extensive use of the Plan Area for recreational snowmobiling (day trips).

Organized snowmobile clubs in Fernie (85 members), Sparwood and Elkford maintain trails and tracks, and assist recreational snowmobilers as well as snowmobile tourists in locating trails and 'play areas'.

There are no direct data on snowmobiling participation rates for residents in and around the Plan Area. The Revelstoke Snowmobile Strategy[44] completed in 2002 provides some indication of the levels of snowmobiling activity and expenditures in that area, based on trail head registrations and a survey of riders.

Selected Results from the Revelstoke Snowmobile Strategy Study (2002):

- 68% of riders from Alberta, 15% from elsewhere in Canada, 12% from USA.
- 70% of visitors mentioned 'the snow' as being what they liked most about snowmobiling in the Revelstoke area.
- Over 80% of visitors indicated an awareness of motorized restrictions in the area, and Mountain Caribou habitat issues.
- Average daily expenditures by visitors were: accommodation and meals $78.39 (39%), snowmobile costs $52.83 (24%), entertainment $50.27 (22%) and miscellaneous $33.13 (15%), for a total of $223.62 per non-resident day.
- An estimated 22,000 non-resident rider days in the Revelstoke area, at an average of $223.62 per day in expenditures, created a local expenditure impact of $4.9 million in the 2001/2002 season.
- Registered trail users increased by 600% over the past decade, and 100% over the past four seasons. Some of this is due to higher registration compliance and enforcement.
- Visitations were projected to increase from 22,000 days to 30,000 days over the next five years.
- The 22,000 visitor rider days are estimated to be 90% of total rider days, with the balance (2,444 rider days) attributed to local riders.

The 2002 population of Revelstoke is estimated at 7,945[45]. The 2,444 local resident rider days estimated above represents 0.3076 rider days per resident. Applying this ratio to the combined

[44] City of Revelstoke, *Revelstoke Snowmobile Strategy*, 2002, www.cityofrevelstoke.com/edc/snowmobile.
[45] BC Stats, population estimates for BC municipalities.

population of Elkford, Sparwood and Fernie of 11,786[46] for 2002 yields 3,625 local resident rider days in and around the Plan Area.

In addition to resident snowmobilers, there are also independent snowmobiling tourists utilizing the tracks, trails and play areas of the Plan Area. The extent of this activity is not known, but anecdotal information suggests that it is extensive. Included in this category are riders undertaking day trips from staging areas outside of the Plan Area, riders undertaking day trips from staging areas within, or very near the Plan Area, and riders undertaking multiday excursions using accommodations in communities near the Plan Area.

It is unlikely that the Plan Area attracts snowmobile tourists in the numbers noted above for the well established and very popular Revelstoke area, which has aggressively promoted this type of tourism for many years. If the Plan Area attracts one third of the number of snowmobiling visitors attracted to Revelstoke, this would equate to about 7,300 rider days, which is about twice the number of estimated resident rider days.

Estimates of expenditures by snowmobiling tourists range between $85[47] and $225[48] per day. The Revelstoke estimate of $225 per day included only those who stayed overnight. Several people contacted during the course of this assessment indicated that the Elk Valley area has difficulty capturing the economic benefits of visitors, especially those from Alberta, due to its location near the BC-Alberta border. The lower cost structure (petroleum taxes, PST) in Alberta entices many to make as many of the required expenditures as possible on the Alberta side of the border.

Applying the low end of the expenditure range ($85 per day) to 7,300 rider days yields $620,000 per annum in possible independent snowmobile touring expenditures in Elk Valley communities. These communities would be more likely to capture food, accommodation and entertainment expenses than fuel or snowmobile equipment acquisition and maintenance expenses.

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[46] BC Stats, population estimates for BC Municipalities.
[47] *Socio-Economic Overview of the Crowsnest Pass*, 2002
[48] *Revelstoke Snowmobile Strategy, 2002.*

APPENDIX 3 BACKCOUNTRY COMMERCIAL OPERATIONS

This appendix assesses the impacts of backcountry commercial operations. This includes guided hunting, guided angling and adventure travel operators.

Appendix 3-1 Guided Hunting

There are 11 guide outfitter territories, which are either entirely or partially within the Plan Area. These operations cater primarily to an international clientele from USA and Europe, and while they must all be operated by a B.C. licensed guide, many are backed by investors from outside of Canada.

While guided hunting is the primary product offered by these operators, many also offer wilderness adventure and wildlife viewing tours outside of major hunting seasons. It is estimated that the average guide outfitter in B.C. in 2001 generated $138,500 in revenues from hunting (80%) and $34,500 from other activities (20%), for total revenues of $173,000.[49] These data, along with estimates of employment, employment income and government revenues generated by guide outfitting are summarized in the table below.

Table 13 Economic Parameters of Guide Outfitting in BC and the SRMMP Area

Per Annum	BC Average per Operation[1]	SRMMP Average per Operation	SRMMP Area[2] Total
Hunting Clients	21	26	287
Client Days	182.2	221	2,428
Hunting Revenues	$138,500	$190,000	$2,090,000
Other Revenues	$34,500	$10,000	$110,000
Total Revenues	$173,000	$200,000	$2,200,000
Employment (PYs)	2.6	3	33
Wages & Salaries	$69,300	$79,500	$874,500
Tips and Gratuities @ 7% of Gross Revenues	$12,110	$14,000	$154,000
Government Revenues[3]	$21,300	$21,300	$234,300
Net Economic Value[4]	$34,020	$35,975	$395,725

Notes:

1. Source: G.S. Gislason & Associates, *The Guide Outfitting Industry in BC, An Economic Profile Draft Report*; October 2002; BC Ministry of Sustainable Resource Management.
2. The SRMMP Area Total is calculated as 11 times the BC average per guide outfitter operation. The area covered by the 11 guide outfitting territories is somewhat larger than the Plan Area, but each territory is at least partially in the Plan Area.
3. Government revenues include Guide and Assistant Guide Fees, Guide Royalties, Client Hunting Licences, Client Hunting Tags, Land Tenure, Park Use, Water Licences, Grazing Licences and Property Taxes. Income Taxes are not included.
4. Net Economic Value is calculated as Government Revenues plus 5% of Wages, Salaries and gratuities (assumed economic rent to labour) plus 5% of Total Revenues (assumed economic rent to capital). An estimate of Consumer Surplus to the hunters is not included as the hunters are not residents of BC.

[49] G.S. Gislason & Associates, *The Guide Outfitting Industry in BC, An Economic Profile Draft Report*, BC Ministry of Sustainable Resource Management, October 2002.

Guide outfitting territory tenures confer upon the licensee exclusive use of a territory for guided hunting operations (but not for recreation or other commercial uses of the land). The exclusive nature of these tenures, coupled with the requirement that non-resident hunters must use the services of a licensed guide, has generated economic rent that is capitalized in the value of these transferable tenures. Recent sales of these tenures have indicated values for the licenses of up to $1 million (exclusive of hard assets such as lodges, cabins and equipment).

There are several factors that may make the economic parameters for the SRMMP Area guide outfitting operations different than those for the provincial average. These include species hunted, wildlife populations, scale of operations, quality of lodging offered, proximity to client markets and area specific hunting regulations.

Data from the BC Ministry of Water Land and Air Protection[50] indicate that the animal harvest and hunting effort by non-resident hunters declined between 1984 and 2001. Comparing annual averages for the ten year period 1984 to 1993 (Table 14) with annual averages for the three year period 1999 to 2001 (Table 15), total animals killed fell from 174 per year to 134 per year (23% decline). Total hunter days (which is inflated through double counting when summed across species and management units) fell from 3,185 per year in the earlier period to 2,357 in the later period (26% decline). Most of this decline can be attributed to declines in elk, black bear and grizzly bear hunting.

[50] BC Ministry of Water Land and Air Protection Wildlife Allocation and Use Section, *Summary Statistics Data Base*, Victoria

Table 14 East Kootenay Hunting Effort for Selected Management Units, 1984-1993

East Kootenay Hunting Effort in MUs 4-1,4-2,4-22 and 4-23* for Selected Species

Annual Averages for Period 1984 - 1993

		Elk			White Tailed Deer**			Mule Deer**			Moose			Grizzly Bear		
		Animals Killed	Number of Hunters	Hunter Days	Animals Killed	Number of Hunters	Hunter Days	Animals Killed	Number of Hunters	Hunter Days	Animals Killed	Number of Hunters	Hunter Days	Animals Killed	Number of Hunters	Hunter Days
MU 4-1	Res.	74	504	3,717	62	232	1,634	54	257	1,821	38	158	804	3	11	131
	Non-Res.	15	47	360							2	5	31	1	2	21
	Total	89	552	4,078	62	232	1,634	54	257	1,821	40	163	834	3	14	152
MU 4-2	Res.	99	482	3,321	81	313	1,911	196	462	2,647	13	73	347	1	5	59
	Non-Res.	19	46	347							1	3	26	2	4	38
	Total	118	528	3,668	81	313	1,911	196	462	2,647	14	77	373	3	8	97
MU 4-22	Res.	323	1,598	12,105	321	1,046	7,523	203	903	6,095	30	133	585	2	8	98
	Non-Res.	29	75	529				0			2	3	15	2	4	24
	Total	352	1,672	12,633	321	1,046	7,523	203	903	6,095	32	136	600	4	11	122
MU 4-23	Res.	474	1,957	18,676	117	604	5,228	138	749	6,572	98	394	2,159	3	12	223
	Non-Res.	15	36	258				0			2	4	19	2	4	34
	Total	489	1,993	18,934	117	604	5,228	138	749	6,572	99	398	2,178	5	16	257
Total	Res.	970	4,541	37,819	581	2,194	16,296	591	2,370	17,135	178	758	3,894	9	36	511
	Non-Res.	77	204	1,494	0	0	0	0	0	0	7	16	91	6	13	117
	Total	1,047	4,745	39,313	581	2,194	16,296	591	2,370	17,135	185	774	3,985	15	49	628

		Goat			Mountain Sheep			Cougar			Black Bear			Total All Species		
		Animals Killed	Number of Hunters	Hunter Days	Animals Killed	Number of Hunters	Hunter Days	Animals Killed	Number of Hunters	Hunter Days	Animals Killed	Number of Hunters	Hunter Days	Animals Killed	Number of Hunters	Hunter Days
MU 4-1	Res.	10	18	109	0	16	103	0	3	20	8	68	515	250	1,267	8,853
	Non-Res.	6	6	27	1	3	30	0	0	1	7	33	267	30	97	737
	Total	16	24	136	1	20	132	0	3	21	15	101	782	281	1,365	9,590
MU 4-2	Res.	4	8	45	4	48	305	3	12	105	7	43	307	406	1,445	9,046
	Non-Res.	2	2	6	2	5	49	1	2	9	12	39	316	38	101	790
	Total	6	11	51	5	53	353	4	14	113	19	81	623	444	1,546	9,836
MU 4-22	Res.	44	86	419	5	64	401	3	16	126	22	165	1,072	952	4,018	28,423
	Non-Res.	18	21	94	1	4	27	1	1	5	11	46	340	64	153	1,034
	Total	61	107	513	6	68	427	4	17	131	34	211	1,411	1,016	4,171	29,456
MU 4-23	Res.	46	92	532	16	140	1,436	2	11	137	43	228	2,193	936	4,186	37,156
	Non-Res.	12	13	58	2	3	20	0	0	1	10	28	235	43	87	624
	Total	58	105	590	17	142	1,456	2	11	138	53	256	2,428	979	4,273	37,780
Total	Res.	103	204	1,105	25	268	2,244	8	42	387	80	504	4,087	2,545	10,916	83,478
	Non-Res.	37	42	186	5	15	125	2	3	15	40	145	1,157	174	438	3,185
	Total	140	246	1,291	30	282	2,369	10	45	403	120	649	5,244	2,719	11,354	86,663

* These management units cover an area somewhat larger than the SRMMP and include all of the SRMMP area.

** The data for White Tailed Deer and Mule Deer represent a 7 year annual average 1987-1993

Source: Summary Statistics Data Base, BC Ministry of Water Land and Air Protection, Wildlife Allocation and Use Section, Victoria

Table 15 East Kootenay Hunting Effort for Selected Management Units, 1999-2001

East Kootenay Hunting Effort in MUs 4-1,4-2,4-22 and 4-23* for Selected Species

Annual Averages 1999 - 2001

		Elk			White Tailed Deer			Mule Deer			Moose			Grizzly Bear		
		Animals Killed	Number of Hunter Hunters	Days	Animals Killed	Number of Hunter Hunters	Days	Animals Killed	Number of Hunter Hunters	Days	Animals Killed	Number of Hunter Hunters	Days	Animals Killed	Number of Hunter Hunters	Days
MU 4-1	R	16	144	1,118	26	104	700	10	123	780	10	19	95	2	5	71
	N	6	24	195	0			2			4	6	27	1	2	21
	Total	22	168	1,312	26	104	700	11	123	780	14	25	123	3	8	92
MU 4-2	R	21	203	1,415	122	345	2,346	48	302	1,791	3	9	52	1	1	11
	N	6	28	216				3			2	2	14	0	1	8
	Total	27	231	1,631	122	345	2,346	51	302	1,791	5	11	66	1	2	18
MU 4-22	R	67	614	4,841	329	938	7,167	32	480	3,378	6	9	31	0	2	26
	N	12	61	405	2			4			3	6	34	1	1	6
	Total	79	675	5,247	331	938	7,167	36	480	3,378	9	15	64	1	4	32
MU 4-23	R	105	679	7,111	131	518	4,794	50	436	4,335	36	45	161	1	1	1
	N	7	19	126				1			2	3	14	1	1	1
	Total	112	698	7,237	131	518	4,794	51	436	4,335	38	48	175	1	1	3
Total	R	209	1,640	14,485	608	1,905	15,007	140	1,340	10,284	55	82	339	3	10	109
	N	30	132	942	2	0	0	9	0	0	11	17	89	3	5	36
	Total	240	1,772	15,427	611	1,905	15,007	149	1,340	10,284	66	99	428	6	15	145

		Goat			Mountain Sheep			Cougar			Black Bear			Total All Species		
		Animals Killed	Number of Hunter Hunters	Days	Animals Killed	Number of Hunter Hunters	Days	Animals Killed	Number of Hunter Hunters	Days	Animals Killed	Number of Hunter Hunters	Days	Animals Killed	Number of Hunter Hunters	Days
MU 4-1	R	4	16	90	1	12	63	0	1	1	6	42	293	75	465	3,210
	N	2	3	24	0	3	27	1	2	8	6	26	229	22	66	532
	Total	6	19	114	2	15	90	1	2	9	11	67	522	96	531	3,742
MU 4-2	R	3	11	56	2	50	306	2	11	223	6	43	393	208	976	6,592
	N	2	3	18	3	8	72	5	6	25	15	34	261	36	82	615
	Total	6	14	74	5	58	378	7	17	248	21	77	654	244	1,058	7,207
MU 4-22	R	12	50	291	1	60	352	5	29	308	8	83	634	460	2,265	17,028
	N	9	13	56	0	4	35	5	7	32	14	49	347	51	142	915
	Total	21	63	346	1	64	387	10	36	339	22	133	982	511	2,407	17,943
MU 4-23	R	22	82	462	6	107	1,020	3	20	233	25	128	1,362	379	2,016	19,480
	N	12	16	91	2	4	27	1	1	3	1	5	34	26	48	295
	Total	34	98	553	8	111	1,047	4	21	236	26	133	1,396	405	2,063	19,775
Total	R	41	159	898	10	229	1,740	11	60	764	45	296	2,682	1,122	5,722	46,310
	N	26	36	189	5	18	161	11	16	68	35	114	871	134	338	2,357
	Total	67	195	1,087	16	248	1,902	22	76	832	80	410	3,554	1,256	6,060	48,667

* These management units cover an area somewhat larger than the SRMMP and include all of the SRMMP area.

Source: Summary Statistics Data Base, BC Ministry of Water Land and Air Protection, Wildlife Allocation and Use Section, Victoria

Appendix 3-2 Guided Angling

There are approximately 72 B.C. licensed guides and 88 assistant guides in the East Kootenay region, of which 35 guides and 40 assistants operate on the Elk River[51]. There is also some use of the Bull, Wigwam and Flathead rivers for guided angling. Angling guide operations charge from $300 to $500 per day and cater largely to US clients (85%)[52] .

The Elk River Creel Survey 2002[53]estimated that there were 2,022 guided angler days (92% US residents) on the Elk River between Sparwood and Elko in 2002 (July 1 to Oct. 31). If these guided anglers paid an average of $400 per day to their guides, then the Elk River fishery generated total guiding revenues of $810,000. Assuming that this represents about two thirds of all guided angling in the SRMMP area, guiding revenues generated by the SRMMP area fisheries

[51] Jamieson, B. D. Brooks, et al Draft March 25, 2003; pg.51

[52] Ibid, pg. 51

[53] Heidt, K.D., 2002, pg. 11.

total about $1.215 million.

B.C. residents do not provide all of the guiding services offered in the SRMMP area, as illegal guiding operations from Alberta and the U.S. have also been observed operating in the SRMMP area. The extent of this illegal activity is not known.

Appendix 3-3 Adventure Travel

One of the main adventure travel operators in the SRMMP area is Island Lake Lodge, which focuses on cat-skiing and hires 85 people during the winter months. The Island Lake Lodge is on private lands, but some of the guided tours and cat-skiing takes place on crown lands.

The guide-outfitting operations also offer adventure tours and these account for some $110,000 in revenues. These are included in the guide-outfitting sector.

In addition to the Island Lake Lodge and the guide-outfitting operations, there are an estimated 30 commercial operators who offer guided adventure tours in a variety of sectors. These range in size from part-time guides to operations hiring up to 10 people during the peak summer or winter months.

The following table summarizes the types of activities, number of operators and approximate revenues that might be generated from the Plan Area in commercial backcountry tourism. The intent of these estimates is to provide a rough idea of the magnitude of impacts and should be therefore be viewed as very approximate.

Table 16 Socio-Economic Impacts of Adventure Travel Operators in SRMMP

Description of Activity	Number of Operators (may offer more than one activity) (note 1)	$ per Client Day (note 2)	Gross Revenues per Operator (note 2)	Estimated SRMMP Revenues from Activity
Snowmobiling - Popular destination for snowmobiling; strong interest in acquiring commercial tenures	1 larger operation, potentially 2 to 4 others	$300 per day (note 3)	$100,000 for large operators	$200,000
Ski Touring – Popular destination for ski-touring	2 to 5 operators	$190 per day	$114,000 (600 client days)	$200,000
Cat-skiing – major operator is Island Lake Lodge & Powder Cowboys	Mainly Island Lake Lodge			$4 million
Heli-skiing – no existing operators and potential is viewed as limited	-	-	-	-
Heli-hiking – no existing operators	-	-	-	-
ATVs, Motorbikes – Popular activity for local residents; used in conjunction with other recreation activities such as hunting, berry picking, wood gathering, and general access to backcountry.	2	$200 to $250 per day	$25,000 (note 4)	$50,000
Mountain Biking -	1 larger operator, potentially 2 or 3 smaller operators	$150 per day	$100,000 for large operators, $45,000 for small operators	$200,000

Description of Activity	Number of Operators (may offer more than one activity) (note 1)	$ per Client Day (note 2)	Gross Revenues per Operator (note 2)	Estimated SRMMP Revenues from Activity
Hiking/ Wildlife Viewing including Photography	7 operators but assume 2 do not overlap with other activities	$200 per day	$100,000 (500 client days) for large operators	$200,000
River Rafting, Canoeing, Kayaking	3 smaller operators	$140 to $150 per day	$50,000 per operator	$150,000
Horseback Trail Riding	6 operators, but this includes guide-outfitting	$200 to $300 per day (note 5)	$100,000 (500 client days)	$100,000 excl. guide outfitting
Other (e.g. Caving, Rock Hounding & Recreational Prospecting, Fossil Gathering and Fossil Tours)	May be up to 5	Varies depending on activities		$100,000
TOTAL (estimate) Cat-Skiing and Adventure Travel Lodge Other Adventure Operators	May be up to 30	$150 to $300 per day	$25,000 to $114,000	$4 million Up to $1.2 million
TOTAL	May be up to 30			$5.2 million

Notes:

1. The number of operators is based on: Jamieson (2003) and discussions with industry representatives.
2. These assumptions are based on: Stuart Gale & Associates and Pierce Lefebvre Consulting, *Building Block for Economic Development & Analysis, Land Based Ecotourism*, draft dated January 31st, 2003.
3. Estimates for gross revenues from guided snowmobiling activity are based on ski-touring operators and the fact that the cost of guided snowmobiling is $300 per day (Jamieson, 2003) whereas guided ski-touring rates are $190 per day.
4. There are no building blocks for ATV touring activities, but one operator says that the potential is much less than for guided snowmobiling activities.
5. Stuart Gale & Associates et al, $200 per day whereas Jamieson indicates $300 per day.

The following table provides a very rough estimate of the annual Net Economic Value from adventure travel commercial operators in the SRMMP.

Table 17 Total Socio-Economic Impacts from Adventure Travel Operators in SRMMP

	Total
Revenues From above table	$5, 200,000
Wages and Salaries: 25% of revenues (note 1)	$1,300,000
Public Sector Fees (assume $1,000 per small operator, include room tax for lodge (note 2)	$70,000
Annual Net Economic Value ($)	
• Public sector rent:	$70,000
• Labour rent – say at 5% of wages	$65,000
• Industry rent – say at 5% of revenues	$260,000
Total Net Economic Value	$395,000

Notes:

1. Wages and salaries are based on the following: river rafting: 20%, horseback trail riding: 28%, multi-day hiking: 30%, ski-touring: 28%, bike touring: 22-25% and lodges: 25.8%; Source: MSRM, *Building Block, Land Based Tourism*, 2003 and *Building Block-Commercial Lodges and Camps/Huts*, July 2002.
2. Government fees and permits can range from $500 to up to $3,000 for larger adventure tourism operations; also, room revenue tax of 8%.

APPENDIX 4 SOCIO-ECONOMIC IMPACT PARAMETERS BY SRMMP ACTIVITY

The following table outlines some of the socio-economic impact parameters estimated for various industrial and recreation activities occurring, or potentially occurring, in the SRMMP area. These estimates are derived from data presented in Appendices 1 through 4 of this report. In many cases the **estimates are very speculative**, and presented only to give the reader a very rough idea of the magnitude of socio-economic impacts these activities might generate. Not all of the activities mentioned elsewhere in this report are included individually in this table.

Socio-Economic Impact Parameters by SRMMP Activity

	Annual Gross Revenues/ Expenditures	Direct Jobs	Net Economic Value
Coal, Metals and Minerals:			
• Coal Exploration in SRMMP	Intermittent		Modest
• Coal Mining in SRMMP	Substantial Potential	-	Substantial Potential
• Mineral Exploration	$500,000	5 PYs	Minimal
• Metals and Mineral Mining	Modest Potential		Modest Potential
Energy:			
• Oil and Gas and coal bed methane	Substantial Potential		Substantial Potential
Forestry			
• SRMMP area	Substantial	155 PYs	$3.15 million
Backcountry Recreation			
• Resident Hunting	Expenditures of $2.4 million		$2.4 million
• Resident Angling	Expenditures of $2.7 million		Unknown, Likely Substantial
• Wildlife Viewing / Hiking	Expenditures of $2.5 million		Willingness to pay of $6.8 million
• Snowmobiling	Expenditures of $620,000 Substantial Potential		Unknown Substantial Potential
• Ski Touring	Unknown but likely Substantial		Unknown but likely Substantial
Backcountry Commercial			
• Guided Hunting	$2.2 million in revenues	33 PYs	$0.4 million
• Guided Angling	$1.215 million in revenues	Unknown	Unknown
• Adventure Travel Lodge and Cat Skiing Operations	$4 million in revenues	50 PYs (80 full time in winter)	$0.3 million
• Adventure Travel Operators	$1.2 million in revenues	Unknown	$0.1 million
Agriculture	5 ranchers		Minor
Trapping	$0.06 million		Unknown

In terms of net economic value, the most significant existing activities are forestry, resident hunting, resident angling, wildlife viewing/hiking and perhaps ski touring. In addition, potential future activities with substantial net economic value are coal mining, coal bed methane and snowmobiling.

APPENDIX 5 SOCIO-ECONOMIC SIGNIFICANCE BY SECTOR AND SRMMP IMPACTS

Description of Socio-Economic Significance	SRMMP Impacts
COAL MINING AND MINERAL EXPLORATION • Coal mines that are adjacent to the SRMMP area generate some 2,500 PYs of direct employment and $172.4 million in direct employment income. For every direct PY, 0.61 PY in indirect and induced employment is generated regionally and another 0.69 PY is generated elsewhere in B.C. The coal mines provide an estimated $7.4 million in mining and mineral taxes, $6.9 million in property taxes to Elkford, Fernie and Sparwood, and another $16.9 million in other industry payments to governments. • Net economic value from existing coal mines (which are not in the Plan Area) is estimated at $16 million including the $7.4 million in mining and mineral taxes and $8.6 million in labour rents. • Existing coal mining sites are outside of the Plan Area, but coal deposits extend into the Plan Area in the upper Elk Valley and the Flathead.	NEUTRAL FOR COAL MINING POTENTIAL • Does not impact existing coal mining operations. • Confirms boundaries of the ERDZ-Coal lands, but does not specify ERDZ-Coal guidelines, which it intended to do. This has left some uncertainty for licence holders on ERDZ-Coal lands in the Plan Area. • Designates conservation measures for the Lower Flathead area, which could increase development costs for known coal resources in the area. POSITIVE FOR MINERAL EXPLORATION • The probability of finding and developing a mineable deposit is now increased; the positive impact results primarily from the two-zone legislation, not the SRMMP (the plan confirms the two-zone system for mining in the Plan Area, stating numerous times that mineral exploration and development are permitted anywhere outside the protected areas). • Designates conservation measures for the Lower Flathead area, which could increase development costs of the copper and gold prospects in that region. On the other hand, these conservation measures may help reduce the need or demand for additional protected area.
ENERGY • Some potential but no existing oil and gas activity. • Substantial coal bed methane potential; pilot testing is proceeding near the SRMMP area.	POSITIVE FOR ENERGY SECTOR • Potential exploration and development cost increases in some areas are balanced against the generally greater certainty of how and where development can proceed.

Description of Socio-Economic Significance	SRMMP Impacts
FOREST INDUSTRY: • The major forest operations in the Cranbrook area generate 922 PYs of processing employment; major operations include the Tembec wood products facilities in Cranbrook and Elko, the Tembec pulp mill in Skookumchuck and the Galloway Lumber mill. • For each m3 harvested, the forest industry generates an estimated 0.93 of direct employment, 0.49 PY of indirect and induced employment in the region and another 0.68 PY of indirect and induced employment elsewhere in B.C. • The SRMMP represents 19.2% of the Timber Harvesting Land Base of the Cranbrook TSA, which translates to an estimated 167,283 m3 AAC contribution assuming a pro-rata share. • Stumpage and related payments are $16.45 per m3. • The net economic value from the SRMMP timber is estimated at $3.15 million, including $2.75 million in public sector rents (stumpage and related payments) and $0.4 million in labour rents.	POSITIVE OVERALL FOR FOREST INDUSTRY • Positive timber volume influences from new Ungulate Winter Range management and the matrix approach to Connectivity, should offset any negative influences from Riparian or Backcountry River Corridor management objectives. • Logging costs may increase as a result of management prescriptions relating to riparian areas, particularly in the Flathead area and from seasonal activity restrictions on Ungulate Winter Range; also, recreation access control may impose costs on licensees. • Greater restrictions in the Flathead area, however, may reduce demand for more protected area in that region, which would prevent timber harvesting entirely. • The spatial designation of OGMAs/Mature, the Connectivity Matrix and the SRMMP interpretation of Wildlife Tree Retention tables should reduce planning costs. Some of the savings in planning costs may be partially offset by the requirements for visual impact analyses and by additional costs related to planning for logging near consumptive streams and watersheds. • All of the SRMMP management objectives are rooted to some degree in the EKLUP, the KBLUP-IS, the KB-HLPO or the Forest Practices Code. • The SRMMP has at least partially delivered a tangible level of timber access and land management certainty. • The SRMMP is likely to assist companies in achieving some levels of forest stewardship certification and in demonstrating to the wider community that sound forest management is being practiced. Vulnerability to product boycotts or production disruptions will likely be reduced.

Description of Socio-Economic Significance	SRMMP Impacts
BACKCOUNTRY RECREATION Resident hunting: • Hunting for elk, white tailed deer and mule deer accounts for 85% of hunting effort in SRMP area. • Number of resident hunters and hunting effort has dropped by almost half since the mid-1980s. • Total expenditures related to hunting are estimated at $2.4 million for 2002. • Net economic value is also estimated at $2.4 million. Resident angling: • Number of anglers in B.C. has remained stable over the past 10 years (300,000 BC residents and 80,000 non-residents). • Estimates for SRMMP suggest 19,381 angler days with B.C. residents accounting for 34%, other Canadian accounting for 24% and U.S. residents accounting for 42%. • Total expenditures from anglers in the SRMMP area are estimated at $2.7 million. Wildlife Viewing: • B.C. residents spent on average $17.40 per recreation day on direct wildlife related activities (1996), but would be willing to pay $44.60 more per recreation day (net economic value). • Assuming that the SRMMP area accounts for 7.5% of expenditures related to wildlife viewing in the Kootenays, B.C. residents' expenditures on direct and indirect wildlife viewing activities in the SRMMP area add to $2.5 million per annum. • Willingness to pay indicates $6.8 million in net economic value. Snowmobiling: • The SRMMP generates an estimated 3,625 local resident days and another 7,300 rider days by non-residents. • Expenditures from non-residents snowmobiling in the area are estimated at $620,000 per season, based on an average of $85 per day. This is at the low end of expenditures by snowmobiling enthusiasts to reflect the difficulty in capturing the economic benefits of visitors from Alberta.	BACKCOUNTRY RECREATION • The SRMMP restrictions will positively impact non-motorized activities throughout the year. Activities will have dedicated non-motorized areas, but can also continue to use areas that allow motorized access. • The restrictions on summer motorized access may have negative impacts on certain activities such as botanical forest product gathering, wood gathering, and for recreational users who are seniors, handicapped, or young families who cannot easily access the backcountry. • The restriction of heli-aided activities reduces the range of experiences available to recreationists. • The negative aspects of access restrictions imposed by the SRMMP will be more pronounced for resident recreationists, whose activities tend to be more spontaneous, than for commercial tourism operators.

Description of Socio-Economic Significance	SRMMP Impacts
COMMERCIAL BACKCOUNTRY RECREATION Guide-Outfitting: • There are 11 guide-outfitter territories in the SRMMP, which generate 33 direct PYs of employment. • B.C. licensed guides must operate each territory, but investors from outside Canada back many operations. • Total revenues are $2.2 million including $2.1 million from hunting and $0.1 million from other activities. • Net economic value is estimated at $395,725, which includes $234,300 in government revenues (public sector rent), $51,425 in labour rent and $110,000 in industry rents. • Consumer surplus for hunters is not included as hunters are not local residents. • Recent sales of guide-outfitter tenures have indicated values for the licenses of up to $1 million (exclusive of hard assets such as lodges and equipment). • The animal harvest and hunting effort by non-resident hunters has declined between 1984 and 2001. Guided Angling: • Annual guiding revenues for angling in the SRMMP are estimated at $1.215 million, assuming that guided angling in the Elk Valley account for two-thirds of all guided angling in the SRMMP. Adventure Travel: • The Island Lake Lodge (and associated cat-skiing operations) is the main adventure travel operator in the SRMMP area, hiring 85 people during the winter months. The lodge is on private land but some of the guided tours and cat-skiing takes place on crown lands. • There may be up to 30 other adventure travel operators that offer a variety of tours in the SRMMP area including ski touring, snowmobiling, ATVs and motorbike tours, mountain biking, river rafting/canoeing/kayaking, caving, etc. • Combined with Island Lake Lodge's operations (which generate the majority of the revenues), these operations might have annual revenues of up to $5.2 million (excluding adventure tours by guide-outfitting of approximately $110,000 in revenues), and an annual net economic value of $395,000.	COMMERCIAL BACKCOUNTRY RECREATION • The Recreation Access Management zoning is generally beneficial to commercial tourism operators, in enhancing their ability to deliver a consistent experience to clients. • The restrictions on motorized access are not as constraining to commercial operators, as they can more easily choose where to operate. • Constraints on heli-aided commercial tourism operations reduce the options available to commercial adventure tourism developers. • Restrictions on backcountry lodge development may preclude some significant market opportunities, and/or confer benefits on existing lodge and cabin owners.

Description of Socio-Economic Significance	SRMMP Impacts
AGRICULTURE • There are 5 ranchers grazing livestock in the SRMMP area. • Suitable grazing land is a scarce resource in the region.	NEUTRAL • Plan supports more intensive management of existing range lands to increase forage production. • Limits domestic grazing opportunities in many areas.
TRAPPING • There are 25 traplines in the SRMMP area with gross revenues estimated at $62,500.	POSITIVE • Conservation measures and motorized access restrictions (which do not apply to licensed trappers) should enhance wildlife habitat.

FIRST NATIONS
• The entire SRMMP Plan Area falls within the Ktunaxa Nation's Traditional Territory. The Ktunaxa are currently at Stage 4 of the 6-stage Treaty Process, which is neither limited, nor intended to be limited, by the SRMMP.
• The Ktunaxa have expressed concern about their limited capacity to effectively participate in the planning process, and do not consider the consultation that occurred prior to publication of the draft plan to be meaningful or adequate.
• The Socio-Economic Base Case for the SRMMP noted some of the interests and concerns expressed by Ktunaxa representatives at the outset of the planning process, including:
  ◦ Support of environmentally sensitive timber harvesting and a desire to become more involved in the forest industry;
  ◦ The impacts of logging operations on fish and wildlife;
  ◦ The need to integrate timber harvesting with other sectors such as tourism, trapping, hunting, fishing and other traditional, spiritual and commercial uses; and
  ◦ The need to preserve archaeological and cultural sites.
	UNDETERMINED
	• The SRMMP states the intent to provide for cultural, economic and environmental interests of the Ktunaxa, and to continue to pursue consultation with the Ktunaxa Nation.
	• In the course of this assessment, no effective facility or mechanism was established to gather information on how the SRMMP may impact the interests of the Ktunaxa Nation, and no assessment of those impacts is therefore attempted.

Description of Socio-Economic Significance	SRMMP Impacts
SETTLEMENTS: • Declining populations in the SRMMP in the past 20 years have limited the pressure to open new settlement areas or expand the existing ones, except in the Fernie area and for certain housing types in Elkford and Sparwood ('shadow population'). • Fernie, Sparwood and Elkford are very dependent on coal mining. The forest industry is also important to Sparwood and Fernie, but especially the unincorporated community of Elko. • Fernie has the greatest degree of diversification with the rapid expansion of the Fernie Alpine Resort, which reports 330,000 skier days for the 2001/2002 season. Accommodation and Food Services labour force in Fernie increased by 77% between 1996 and 2001. • Cranbrook, Jaffray, Tobacco Plains Reserve and the Rocky Mountain Trench communities west of the Plan Area also depend to some degree on the resource values of the SRMMP area.	SETTLEMENTS: • In general, coal industry impacts from the SRMMP will be experienced in Fernie, Sparwood and Elkford, and forest industry impacts in Elko, Jaffrey and Cranbrook. The SRMMP adds some certainty of access to resources for the mining and forest industries, which should result in some increase in confidence in the basic viability of the affected communities. This impact will likely be difficult to detect, however, in the face of the many other regulatory, operating and market uncertainties faced by these industries. • SRMMP impacts on recreation and tourism will be felt in all of the communities mentioned above. The impacts on resident recreation will largely reinforce the lifestyle choices made by the existing populations in these communities. It appears as though past patterns of recreational use and activity have been defended in the Plan, in the face of new motorized technologies that threaten to erode the enjoyment of these activities in many areas. • The Plan may have negative impacts on the ability of Elkford (the most vulnerable of the three major communities), to diversify its economic base through attracting more motorized recreation tourists. Elkford has difficulty, however, capturing the economic benefits of recreation activity.

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